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Discussion of Certain Physiological Problems in the Treatment of Peptic Ulcer*

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In the treatment of any condition on which the last word has not been said, it is well from time to time to review the contemporary information concerning this problem. The treatment of peptic ulcer, both surgically and medically, has been a moot question for a 100 years, or more. Gradually, through the years, more and more is being found out concerning this condition but much remains to be solved, and as a whole, the treatment is far from satisfactory.

The purpose of this paper is, first to discuss the present day physiological opinion with reference to normal digestion and its association with the normal blood picture; then to apply these to the problem of an obstructing duodenal ulcer, with its surgical treatment and complications.

Pavlov[1] divided gastric secretion into three phases: (1) The psychic phase, in which sight, smell and taste of food effect the secretion of gastric juices through the medium of the vagi nerves, and developed the theory of conditioned reflex in this respect. (2) The gastric phase, which is brought about by the presence of food in the stomach. This also includes water. (3) The intestinal phase, which is brought about by the digestion of food and the absorption of the metabolites produced. Edkins[2] brought forth the hypothesis that there is secreted a pyloric or antral hormone, to which he gave the name gastrin, and which he states regulates the gastric phase of gastric secretion, especially with reference to the secretion of hydrochloric acid. This is assumed by some to partake of the nature of histamine, both in its chemistry and in its action upon the acid secreting cells of the stomach.

Throughout the intestinal tract the only place that hydrochloric acid is secreted is from the fundic portion of the stomach. The contents of the stomach and the intestinal tract are roughly isotonic with the blood plasma. In the upper portion of the tract this osmotic balance is maintained largely through sodium chloride. Further along in the intestinal tract the sodium chloride proportion gradually gives way to an increasing proportion of sodium bicarbonate. The blood plasma, under normal conditions of digestion, is maintained at a fairly constant level of from 7 to 7.5 Gm. per cent sodium chloride.

The normal balance of sodium chloride in the body is maintained by a daily intake of from one to two grams in the food itself, and from 2 to 8 Gm. added as seasoning or as a condiment. Also, there is added to the intestinal contents, in addition to the daily oral ingestion of sodium chloride, from 8 to 10 liters of salt-containing solution, made up of gastric juices, bile, pancreatic secretion and succus entericus. Of all this sodium chloride, approximately 95 percent is absorbed further down along the intestinal tract, and the normal daily loss of salt in the stool is usually less than 0.5 Gm. per day. It is also lost from the body in two other normal ways. The first is through sweat glands and varies considerably according to their activity. The other is through the kidneys, through which the usual daily excretion is from 3 to 8 Gm., but in addition the kidneys have the power of excreting a much larger amount if an excess is present.

Now let us consider the physiological situation in the case of a sick patient who is to be operated upon, or has been operated upon, for an obstructing duodenal ulcer. These patients may come in dehydrated from vomiting and in a poor nutritional state, with con-

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sequent low plasma proteins and blood electrolytes.

In the case of loss of gastric secretions, or the upper intestinal contents, bile or pancreatic secretions, through some form of fistula, nature has, up to a certain point, the power of stabilizing the osmotic balance between the contents of the intestinal tract and the blood stream by secreting, by way of the kidneys, both water and electrolytes, chiefly in the form of sodium bicarbonate, and this balancing process will proceed down to a breaking point at which the acid base equilibrium is forced to yield to the demand of osmotic equilibrium[3], so that, superimposed upon the state of alkalosis which has been produced, there is also a state of salt depletion, dehydration, and a reduction of osmotic pressure. In addition there develops an N.P.N. retention.

For the simple loss of stomach or intestinal contents, the replacement of an equal amount of normal saline or Ringers' solution in the body fluids is sufficient. To this, however, should be added the amount of sodium chloride necessary for the normal economy of the body. There is an interesting consideration that arises in this connection. Unless the intake of food contains an amount of sodium chloride sufficient to make it isotonic with the blood stream, the electrolytes of the blood stream are drawn into the intestinal tract in an effort to balance this osmotic pressure. In this way a person vomiting a great deal, or who is subjected to intestinal suction, may be severely, and sometimes quite rapidly, depleted of his blood electrolytes. Therefore, it would seem reasonable that, under such conditions of electrolytic loss, the replacement of fluids, whether by mouth, by Levine tube, or by enterostomy tube, should contain sodium chloride in amounts comparable to a normal saline solution, and not plain water.

At this point let us consider the effect of hypoproteinemia upon the physiologic situation. The normal protein content of the blood at 7 to 7.5 Gm. percent is maintained through the normal digestive processes in the patient who is taking and digesting a balanced diet. Should this percentage fall to what is termed the critical point of 5 Gm. percent, then the patient is in danger of developing certain complications incident to the hypoproteinemic state. First, there is a tendency to edema, due to salt retention in the tissues, and in such a condition it is very easy to give the patient too much salt and have him rapidly gain weight from hydremia. In the very sick patient there is a tendency to salt retention. Failure to recognize this can easily lead to the death of the patient. Another condition that can develop, and to which attention has been called by Ravdin[4], is that, for some reason rather difficult to explain, the motility of the intestinal tract is reduced so that vomiting may result and the condition may become gradually worse, rather than better. And again, due to the tendency to edema, there may be edema at the suture line of an anastamosis, between the stomach and jejunum, increasing materially the emptying time of the stomach, or doing away with it altogether. To combat this situation, the simplest method is a blood transfusion, or still better, the transfusion of plasma. It is estimated that it takes 500 c.c. of plasma to maintain the body in nitrogen equilibrium, and unless the patient is anemic, it is far better to give plasma rather than whole blood. The administration of glucose, either in 5 percent or in the hypertonic solution, 10 percent, which requires less fluid, is advisable as it is easily utilized by the body and acts as a conserver of protein metabolites. Certain studies have been made upon the use of certain of the amino-acids by introducing them directly into the blood stream. It seems that, under proper conditions, the protein balance can be maintained this way, but there is some question as to whether or not such proteins are utilized in the tissue building processes. The old theory that proteins, to be utilized fully by the body, have to be conditioned in some way by the intestinal mucosa, seems to hold. Amino-acids ingested are so used.

It has been recognized for some time that hypoproteinemia has a marked effect upon fibroblastic proliferation[4], and that it delays this process, and in so doing retards wound healing. Associated with this there is usually found a vitamin C deficiency which, according to Lanman and Ingalls[5], is an important physiologic factor in this complication.

The necessity for the introduction of fluid, glucose, salt and plasma is done away with immediately the patient begins to have normal digestive processes, and any patient who can digest a balanced diet, and who is putting out from 1,200 to 1,500 c.c. of normal urine a day, does not need to be worried about.

The treatment of massive hemorrhage from a duodenal ulcer has recently come up for considerably more discussion in the literature. The present trend of thought seems to be about as follows: That the man under 40 who has a massive hemorrhage is probably best treated conservatively, and his blood loss simply replaced by transfusion; that the same situation occurring in a man past 40, is more dangerously treated conservatively than treated operatively, but if operated, the operation should be done within the first 48 hours. He should be given a

large transfusion to see whether or not he will react from shock, and if he does react, he should be immediately operated upon. Experience has shown that if more than 48 hours have transpired, transfusion cannot sufficiently revive him to the point where an operative procedure can be of much help.

The type of operative procedure that is used in obstructing ulcer is variable and there is considerable divergence of opinion as to just what is the best thing to do. In some quarters, a simple posterior gastrojujenostomy is performed. In other quarters, various types of resections are practiced. Some adhere to the theory of Edkins[2] and think that probably all that is necessary to remove is the pylorus and antrum. Others, believing that this is of no avail, insist upon extensive resections of the stomach, and some investigation[6] has gone to prove that as much as 200 sq. cm. of the stomach must be removed in order to approach achlorhydria, tested by the injection of one to three doses of 0.5 mg. of histamine. The mere fact that a gastrojejunostomy alone, whether combined with resection or not, reduces the gastric acidity to some extent, and the amount of this reduction does not reach its maximum until several months afterwards, is due to two causes. First, to the decreased emptying time of the stomach in all cases of anastomoses, and second, to the apparent effect of the regurgitant intestinal contents upon the stomach mucosa, bringing about a certain amount of decrease in the secretory activity of the acid secreting cells from some distance away from the stoma.

Occasionally a gastrojejunalcolic fistula results from a simple gastrojejunostomy. Some ulcer cases seem very prone, for some unknown reason, to reform ulcers. Gastric acidity has been pretty well shown[7] to play a part in this, which, together with the nervous temperament of the patient, probably has much to do with the occurrence and recurrence of ulcers. Recent experiments on the human in these cases[8] would seem to show that the diarrhea, loss of weight and progressive debility associated with this condition is due, not to the dumping of the stomach and small intestinal contents into the colon, but rather to some of the contents of the colon passing down the small intestine and, because of the chemical and biological changes incident to this, a diarrhea develops.

CONCLUSIONS: From the above discussion it can be clearly seen that the management of any serious abdominal case necessitates a rather thorough working knowledge, on the part of the surgeon, of the physiological phenomena involved, and that he may get his patient into serious difficulties both by doing too little or too much.

BIBLIOGRAPHY

1. Pavlov, I. P.: The Work of the Digestive Glands, 2nd ed., London, Griffin Company, 1910.
2. Edkins, J. S.: The Chemical Mechanism of Gastric Secretion. Jour. Physiol., 34:133, 1906.
3. Peters, John P.: The Structure of the Blood in Relation to Surgical Problems. Ann. Surg., 112:490, Oct., 1940.
4. Ravdin I. S.: Hypoproteinemia and its Relation to Surgical Problems. Ann. Surg., 112:576, Oct., 1940.
5. Lanman, T. H., and Ingalls, T. H.: Vitamin C Deficiency and Wound Healing; Experimental and Clinical Study. Ann. Surg., 105:616, April, 1937.
6. Wangensteen, O. H., Varco, R. L., Hay, L., Walpole, S. and Trach, B.: Ann. Surg., 112:626, Oct., 1940
7. Mann, F. C., and Williamson, C.S.: The Experimental Production of Peptic Ulcer. Ann. Surg., 77:409, 1923.
8. Pfeiffer, D. B.: The Surgical Treatment of Gastro-Jejunocolic Fistula. S. G. & O., 72:282, Feb., 1941.

Etiology and Management of Contraction Ring Dystocia*

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The recognition of the value of prenatal care, pelvimetry and aseptic care at the time of labor have done much to reduce the hazards of child-birth. Despite such advantages to the parturient woman, much is yet to be desired before assurance can be given to the patient as to the ultimate outcome of her labor.

For many years equal discussions have arisen relative to the etiology and management of abnormal uterine contractions occurring throughout any period of pregnancy; as well as to those cases without mechanical obstruction failing to deliver after long hours of labor.

Speculation relative to the cause of abnormal uterine contractions has attributed this condition to be due to many causes,—principally, to faulty innervation or musculature of uterus; to glandular imbalance between the estrogenic and progestin factors; to calcium deficiency; or, to a psychogenetic basis.

Our own investigation over many years, indicates that the psycho-genetic factor is

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present in most of the cases encountered; but it does not have sufficient basis to preclude other associated causes. Unquestionably, it plays an important part; for there has been a lessening number of these cases since the introduction of analgesia. It has been observed that these contractions still continue to occur in patients whose psychic reaction has been eliminated by producing amnesia.

Moreover, after long hours of labor, it was observed that many of such patients showed evidence of exhaustion, acidosis and even shock at the time of delivery. Then after believing that these abnormal uterine contractions might be accelerated or, at least, intensified by the ever-present acidosis as a result of this complication, it was decided to study acidosis. It was found that acidosis could be prevented in the average normal case by the proper administration of fluids and foods. But where the labor was unduly prolonged the acidosis (as estimated by the CO2 combining power of blood) increased during the first stage, reached its height during the second, and returned to normalcy during the third stage of labor. It was concluded that this ever-present acidosis was from another source; for fluids and foods had been administered and repeated examinations of the urine had revealed the absence of acetone and diacetic acid.

Since acidosis was so frequently observed in all types of abnormal acting uteri, it was felt that there must be some direct relationship. At least the acidosis intensified these contractions and probably accounted for the increasing spasm of the uterine musculature. Moreover, it was observed that in many cases, particularly those at term, when the acidosis was neutralized that the uterus again resumed rhythmical contractions followed by spontaneous labor.

Experimental work reported elsewhere[1], indicates that this acidosis was due to increased lactic acid accumulation in the blood, probably from excessive muscular and uterine activity. It was likewise shown that many of the mild cases of acidosis could be prevented by the oral administration of a teaspoon of soda bicarbonate every four hours, and that each dose would elevate the blood CO2 combining power 4 point volume percent; while moderate or even extreme acidosis could not be corrected by the usual methods such as intravenous administration of glucose with or without insulin or, blood transfusion.

Clinically and experimentally in dogs[2], it was demonstrated that 500 to 1,000 c.c. of a 1 percent solution of soda bicarbonate could be given intravenously; and that without harm was effective in overcoming the acidosis.

Since it was evident that there was some relationship between abnormal uterine contractions and acidosis, and that overcoming acidosis was effective in controlling or restoring the uterus to normal activity, it was decided to study the anatomy of the uterus in order to determine which layer of muscle was involved in this abnormal mechanism. Pride and Simkins[3] dissected the musculature of the uterus, reviewed the literature and reported the long-held opinion that the uterus was composed of three layers of muscle not sharply differentiated, but strongly interlaced.

The longitudinal layer is found under the peritoneum. Between these longitudinal fibers are transverse fibers; the fibers of the middle muscular layer run radially; the innermost layer, adjacent to the sub-mucosa, contains circular and oblique fibers; and just above the internal os is a thicker segment of circular fibers which always forms the so-called physiological retraction ring.

Pride's study indicates that the circular fibers act comparable to intestinal peristalsis and that contraction rings are physiologic and tend to propel the fetus downward. Where waves of contractions are normal with periods of relaxation, the uterus relaxes and the longitudinal fibers retract or shorten. Thus, by their pull they may loosen the circular fiber. Failure of the longitudinal fibers to loosen, or abnormal stimulation of the circular fibers, causes such fibers to become spasmodic. This results in a contraction or constriction ring. Continued constriction of the circular fibers by disturbed nerve impulses probably stimulates the normal retraction to a pathologic one, and thus produces what appears to be multiple rings.

I am inclined to believe that excessive stimulation of the nerve supply to the circular fibers accounts more for this abnormalcy than other factors. It is most likely that the uterine muscular layers have separate and distinct routes of innervation comparable to the iris of the eye.

The iris is composed of circular and transverse fibers to which stimulation of the sympathetic nerves causes the pupil to dilate, while stimulation of its transverse fibers by the para-sympathetic nerves causes it to contract.

Rudolph is inclined to believe that this disturbance of normal uterine contraction may be neurogenic or myogenic. Others believe this purely neurogenic.

Our studies lean toward the neurogenetic basis as the predominating influence. But, unfortunately, the exact anatomy of the intrinsic nerve supply and the conduction routes of nerve impulses of the uterus have yet to be demonstrated.

It was not until Goltz and Freusberg[4], in

1874, demonstrated that a dog became pregnant and delivered with the spinal cord cut, that a clearer basis for the autonomic system became established. Since this became a fact, all kinds of research and diverse opinions have been made relative to its action. Today, most physiologists agree that when the autonomic nervous system is stimulated its impulses either excite or inhibit the action of the involved organ. These impulses also liberate chemical substances at the neuro-effector junction, which are absolutely essential for the completion of the impulses from the nerve to the organ stimulated. One of these substances is acetylcholine. To this, the response elicited is said to be "cholinergic." Another substance is called sympathin, which is epinephrine-like in action with its response said to be "adrenergic."

Generally speaking, stimulation of the sympathetic fibers results in the release of sympathin which has a relaxing effect on the intestines, while stimulation of the parasympathetic with the liberation of acetylcholine results in a contracting effect. The opposite of this is true for blood vessels.

With these established facts relaxation or contraction of the uterus would follow stimulation of the sympathetic nerves; while contraction or relaxation would follow stimulation of the para-sympathetic nerves. But again clinicians and research workers have been unable to determine just which layer of the uterus is supplied by sympathetic and para-sympathetic nerves.

Rudolph and Ivy's[5] work indicates that when various segments of the sympathetic and para-sympathetic fibers are stimulated then various segments of the uterus relax and contract. This finding is confusing; because sympathetic fibers may transmit cholinergic as well as adrenergic impulses.

However, at times it has been noted that the normally expected response to nerve stimulation may be reversed in the pregnant uterus. In 1906, Cushny and Dale[6] designated such as a "pregnancy-reversal" response. This observation of the "pregnancy-reversal" may be demonstrated by the administration of epinephrine as well as by direct nerve stimulation. This "pregnancy-reversal" response is probably dependent upon the presence of large quantities of progestone found in the ovary during pregnancy. Thus, epinephrine injected in the pregnant woman would cause contractions of the uterus, while acetylcholine injections would cause relaxation.

Therefore stimulation of the autonomic nervous system with its normal response or with the pregnancy reversal action may well account for a large number of patients who suffer from abnormal uterine contractions during pregnancy or labor.

I believe that these abnormal uterine contractions are due to faulty nerve mechanism; for many patients suffering from this complication are nearly always highly emotional, react sharply to such stimulants as shock, fear and joy. They are usually apprehensive and have always had a low pain tolerance. If some patients are given assurance and mild sedatives, ofttimes contractions cease. Occasionally, progestin in large doses given daily will effect a cessation of contractions. Other cases respond to a lesser degree to the administration of large doses of calcium. But, up to the present time, severe cases have responded best to magnesium sulphate given intravenously or intramuscularly. Acetylcholine has not been tried prior to the onset of labor.

Despite all forms of above therapy, it is now recognized that a small group of these cases are forced to have the pregnancy terminated. If this is not done, in some of these cases, death of the fetus occurs from asphyxia; while, in others, the membranes rupture even though dilatation of the cervix has not occurred, infection and exhaustion follows and death may ensue. Unquestionably, Caesarian section is the best method to employ in the management of such cases.

To clarify the picture I have attempted to portray three brief case reports that indicate the severity of abnormal contractions occurring in patients before the onset of labor.

CASE REPORTS

No. 1. Mrs. A. H., seen in consultation with Dr. G. P. Rawls in 1933, St. Joseph Hospital, for uncontrollable uterine contractions of six days duration her sixth month of pregnancy. Various sedatives including morphine, the barbiturates, calcium and para-thor-mone had been administered without effect. Patient showed evidence of exhaustion from pain and loss of sleep. She was unquestionably artistic, keenly alert, very temperamental when normal, but was constantly apprehensive that her baby would be born prematurely. Magnesium sulphate was administered intravenously and subsequently intramuscularly every four hours for 48 hours. Then contraction ceased. Pregnancy continued uneventful and patient delivered normally at term.

No. 2. Mrs. A. G., a gravida 3, para 2, first seen in 1934 for painful uterine contractions during her third month of pregnancy. Nine and twelve years previously she had had two normal labors. Her physical examination was negative with the exception of her highly emotional and unstable nervous system. Calcium and calcium with viosterol were given with some apparent effect; but it was necessary that patient remain in bed most of the

time. About two weeks before the expected date of confinement, contraction became so severe that patient was admitted to the hospital. Magnesium sulphate and barbiturates were administered almost continuously but contractions were never completely controlled. The fetus perished. Medical induction was given only after Nature's efforts failed to induce labor. Patient went into active labor and after many hours the cervix became completely dilated, but descent of the fetus did not follow. A contraction ring was suspected; and after patient was under deep ether anesthesia, the hand introduced into the uterus revealed two contraction rings (one around the baby's neck, the other in upper segment of uterus). Difficult version and extraction accomplished the delivery of a still-born baby. Patient made an uneventful recovery.

No. 3. Mrs. P. W., a primipara, seen in consultation with her husband (a physician) in 1934, Methodist Hospital, for uncontrollable uterine contractions of six weeks duration, during her last month of pregnancy. Unsuccessful bag and bougie attempts had failed because of a long, closed cervix. Magnesium sulphate was given intravenously and intramuscularly at regular intervals for 48 hours until contraction ceased. Seven days later a normal spontaneous labor occurred.

Again in March 1937, during her second pregnancy, this patient was seen for painful, uncontrollable uterine contractions during her sixth month of gestation. She had been treated by her physician and her husband prior to my consultation. Magnesium sulphate was given for about four weeks until contractions ceased and patient was discharged from the hospital April 17, 1937.

Two weeks later, patient was re-admitted because of return of uterine contractions. On account of the long previous period of treatment and the inability to stop uterine contractions, abdominal Caesarian section was performed. The uterus was almost tetanic, devoid of circulation and chalk-white. The uterus did not bleed when opened. The baby was markedly asphyxiated and died in a few hours. Tubal sterilization was done to preclude the possibility of recurrence of this complication in subsequent pregnancies.

Through these above examples, it is seen that uterine contractions can be controlled during pregnancy; that often it is necessary to terminate the pregnancy; and that the recognition of the true condition would often eliminate difficult vaginal deliveries.

Clinical evidence reported elsewhere supports our concept that the normal action of the uterine musculature through its innervation is sustained by maintaining the normal alkali-acid balance in the blood and that quite often overcoming acidosis releases contraction rings.

The restoration of slow, sluggish labors to normal action through intravenous administration of glucose or Hartmann's solution in glucose, is seen too often to report in detail.

The following is a case report of the dramatic response of a definite contraction ring dystocia:

A. H., aged 18, a colored primipara, was admitted in active labor, John Gaston Hospital Charity Service, 1934. Physical examination negative, pelvic measurements normal, fetus lying in the L.S.A. position. Labor was slow, but uterus reacted normally until complete dilatation occurred. Descent of the fetus failed to occur after six to eight hours of continued rhythmical labor. Examination revealed a localized contraction ring in the lower one-third of the uterus. The blood carbon dioxide power was 30 point volume percent. One thousand c.c. of a one percent solution of soda bicarbonate was given intranvenously and within two hours spontaneous breech delivery of a living baby occurred.

Occasionally such contraction rings have failed to respond to this therapy. It was concluded that such cases probably resulted from an inadequate or abnormal-acting acetylcholine rather than the normal quantity being neutralized.

It has been reported that the largest supply of acetylcholine found in the human is in the placenta. It is felt that this unusually large supply may be necessary to fulfill the requirements of increased nerve impulses required during labor.

In 1937, Bell and Playfair[7] advised that acetylcholine be given in cases of prolonged labor due to weak and colicky contractions of the uterus, when stimulation and sedation had failed. They reported a favorable outcome of such cases, but did not mention contraction ring dystocia. Apparently, they also did not yield to the pregnancy-reversal response of the sympathetic nervous system; but thought that the acceleration of labor was due to the direct action of the acetylcholine in producing more regular and more intensified contractions.

It is doubtful as to whether administration of acetylcholine acts by increasing the contractions of the uterus or by replacing the deficiency in the nerve impulses. Nevertheless, such cases of contraction ring dystocia are seemingly benefited by the administration of acetylcholine.

We are replacing the acetylcholine deficiency by oral and subcutaneous administra-

tion. The use of this drug must be guarded as it is a two-edged sword. Violent reactions often occur that must be immediately overcome. Acetylcholine (mecholyl) in sensitive patients or in overdosage produces a rapid drop in blood pressure, marked slowing of the heart, excessive salivation, rapid emptying of the bladder and rectum, and even death. Atropine should be given as an antidote in doses from 1/150 to 1/50 of a grain; and immediately all untoward reactions cease.

From my limited number of cases of contraction ring dystocia relieved by the administration of acetylcholine*, I am inclined to believe that it will release the obstruction in a considerable number of cases which, heretofore, required deep inhalation anesthesia and difficult operative delivery with its high attendant fetal and maternal mortality.

* I am indebted to Mr. A. W. Veazey, Merck & Co., Inc., for cooperating and supplying acetylcholine (mecholyl) used in this study.

BIBLIOGRAPHY

1. Pride, Reinberger and Holland, Acidosis and Alkalosis in Obstetrics and Gynecology, American Journal of Obstetrics and Gynecology, Vol. 53, pp. 99-103, 1940.
2. Pride, Reinberger and Holland, An Experimental Study of Acidosis and Alkalosis in Labor, American Journal of Obstetrics and Gynecology, Vol. 35, pp. 793-801, May 1938.
3. Pride, W. T., Retraction Ring Dystocia, Surgery, Gynecology and Obstetrics, Vol. 66, pp. 1047-1053, June 1938.
4. Reynolds, S. R. M., Physiology of the Uterus, 1939.
5. Rudolph and Ivy, American Journal of Obstetrics and Gynecology, 1930.
6. Reynolds, S. R. M., Physiology of the Uterus, 1939.
7. Bell and Playfair, Journal of Obstetrics and Gynecology of the British Empire, 1937.

Fevers of Obscure Origin in Early Life*

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Anyone interested in generel medicine or pediatrics sees a fairly large group of cases showing a rise of temperature, often of low grade type, in children, without any definite physical signs of disease. The temperatures in a number of this group run from one week to many weeks and still there is nothing to show the cause of it. The possibility of tuberculosis gives one more anxiety than anything else when you are in charge of a case of fever of unknown origin.

In a few words Robert Hutchinson has this to say: "Unfortunately, it is a condition which is extremely difficult to exclude, as we have no absolutely trustworthy test for it. This is the more to be regretted as general tuberculosis is almost the only cause of fever without physical signs, in childhood, which has a bad prognosis, and one would be glad to allay the anxiety of parents on the subject at the earliest moment. Unfortunately, that is impossible, and you will often be forced to 'hedge' on the tuberculosis question, saying 'the cause of the fever is so and so, or possibly tuberculosis,' and leaving time to settle the matter. I would say for your comfort that tuberculosis in these cases of obscure fever is to some extent a bogey. It is far oftener suspected and dreaded than actually present, and though it is often impossible to be sure that it is absent, yet the other causes of obscure fever, are so much more numerous than tuberculosis (common though it be) that you may always cherish the hope that the case will end favorably."

"A daily elevation of the temperature above 99.5°, oral, is abnormal and denotes the presence of some disorder."

"Infants and children being immature organisms, as a rule, show a more severe and erratic reaction to fever. This can readily be understood when it is realized that the heat regulation center has not reached that stage of development where it can properly meet and coordinate all the intrinsic and extrinsic factors which determine body temperature." (Jenkins, Journal Oklahoma State Medical Association, April 1934). This thermolability is frequently demonstrated in the new born when we see a perfectly normal infant with one or two degrees of fever and no demonstrable disease.

Fever in the new born develops on or about the third to fourth day. It is usually attributed to dehydration or inanition. One or both are usually relieved by fluids, but we should not neglect the possibility of a causative infection.

Four cases of acute otitis media in the new born were seen and reported by Louis Parcell, N. W. Medical Journal, Dec. 1939, one on the eighth day, one on the fourth day, and two on the third day. All were promptly relieved by myringotomy.

On record at St. Anthony Hospital, new born service, several have been recently seen, including one case of acute severe pyelitis with high fever, high white count, many W. B. C. and clumps in the urine, which was

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relieved in a few days by one of the sulfonamides.

When instituting a search for the cause of obscure fever, look *first* for the cause in that group of illnesses most frequently contracted in early life associated with fever, not the cause of obscure fevers. With this idea in mind and from clinical experience, a routine procedure as follows is suggested. (Kutcher —Archives of Ped. May 1936).

Given a child with a fever of undetermined origin, examine the urine, then make a careful otoscopic examination and finally examine the throat most carefully. These three diseases, pyelitis, otitis and tonsillitis are the most likely causes of fever in a child. Failing to locate the cause in any of these areas, begin at the crown and examine not only carefully but repeatedly every organ and system of organs in the body, to the soles of the feet.

1. Head, neck and ears.
2. Nose, adenoids, sinuses (acute and chronic).
3. Tonsils.
4. Mouth, with its stomatitis, carious teeth and abscess.
5. Neck, adenitis etc.
6. Thorax. Mediastinal adenitis.
7. Tuberculosis. Pulmonary, joints, abdomen, bones and peripheral glands.
8. Heart. Rheumatic endocarditis.
9. Abdomen with colitis and appendicitis and adenitis.
10. Urinary tract. More especially pyelitis.

Though, as stated in the preface of this discussion there are other conditions not belonging to this group, to be thought of.

Undulant fever, tularemia, blood stream infections etc., in which agglutination tests, skin tests and blood cultures are necessary to establish a positive diagnosis. I would like to say here, that the means of arriving at a positive diagnosis in undulant fever seems to be a controversial problem leading to some confusion. (Dr. Hutchinson).

Allergy may be responsible for any known symptom, so it may be responsible for fever too.

We have recently experienced in an 11 months old baby that neoplasms in their early growth, may be responsible for obscure fever, but they are eventually recognized by their size and rapid growth. (Keenan).

No study of any case of prolonged fever can be considered complete without a Wasserman of the blood, and in certain cases, of the spinal fluid. Syphilis may simulate any disease in the books.

Finally, some cases of prolonged obscure fever recover without a diagnosis ever being made. (Felts). If after careful, thorough study no cause can be found and the child is not ill, it is in the vast majority of cases, not a serious matter and no cause for anxiety. This should be carefully gone into and explained to the anxious parents.

SUMMARY

At first, fever may appear to be unexplainable in such conditions as:

1. Acute sinusitis.
2. Acute cervical and submaxillary adenitis.
3. Subacute tracheo-bronchial adenitis.
4. Acute endocarditis.
5. Acute rheumatic fever.
6. Tuberculosis, though careful routine examinations and interpretations of the findings simplify the problem. Repeated intracutaneous tests etc., always remembering, "it is far oftener suspected and dreaded than actually present, and though it is often impossible to be sure that it is absent, yet the other causes of obscure fevers are so much more numerous than tuberculosis that you may always cherish the hope that the case will end favorably."

Some Everyday Problems in Pediatric Practice*

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Oliver Wendell Holmes has said that science is a first rate piece of furniture for a physician's upper chamber if he has common sense on the ground floor; but if he has not plenty of common sense, the more science he has, the worse for his patient.

Common sense has a wide variety of applications. One application may imply the intelligent and adaptive use of knowledge and experience. As an example, a physician of today in possession of a great amount of knowledge may be compared to a person with a great deal of money. The way the money is used or spent makes it a blessing or a curse, depending, of course, on the

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proper or improper use of common sense. However, knowledge as applied to pediatric practice deals predominantly with the physical status of children. The introduction of pyschological care into every day practice has been retarded because it has not been recognized simply as the application of common sense. Certainly the intelligent and sympathetic understanding of the emotional needs of a child is as important to his welfare as the food that nourishes his physical body.

Average newborn infants show practically the same characteristics of body and mind, and under optimum conditions of environmental influence, show a definite sequence of growth and development. At birth they weigh about 7½ pounds; they suckle to obtain food; they show emotional response to fear, anger and joy. At six months of age they weigh about 16 pounds; they continue to suckle but grasp food and other objects and put them in their mouths; they sit alone; but they no longer show fear; they even enjoy being tossed about, and laugh aloud at certain forms of entertainment.

At one year of age they weigh about 22 pounds; they no longer suckle but obtain food from a spoon or cup; they stand alone or may even walk, and use a few simple words; they show marked independence and a tendency to imitate the acts of others.

The tendency of ill-informed or misguided parents either to retard or accelerate this growth and behavior pattern or developmental sequence causes many of the problems that daily confront those of us who deal with children.

Fear on the part of the mother for the welfare of her child is a dominant phase of the maternal instinct and is especially pronounced during the first few weeks of the child's life. This fear, when uncontrolled, impairs the ability of the mother to use rational judgement. This difficulty is evidenced by the child's frequent crying, poor nursing rhythm, vomiting and restlessness. Thus the natural developmental sequence of the child is retarded.

Later on, when the child begins to feed himself, eating should be, by all odds, the most pleasant and most satisfying experience in his life. However, neglect, over solicitude, forced feeding, anger, unpleasant surroundings or physical illness may at this time disturb the hunger reflex and poor nutrition results. This is not because of lack of dietetic knowledge, but rather from injudicious management. Thus again the natural emergence of the child into the next phase of his growth and development is retarded. The child shows this retardation by refusal to give up sucking to obtain food, failure to grow in independence, and so to develop the natural degree of intelligence, skill and emotional balance. Over training, over indulgence or too much supervision, as a form of mismanagement, produces equally disturbing results.

Obviously, parents need the guidance and counsel of physicians who recognize the requirements and responsibilities of child care. Because of fear, ignorance, superstition, folk-lore, prejudices or undue affection and anxiety for their child, many parents find difficulty in utilizing the knowledge and common sense which they ordinarily possess. Of all these, fear is the most disturbing and its control is imperative for any measure of success in rearing a child.

It has been said that improvement in mental hygiene can be accomplished only after several generations of education. However, this is not altogether true, because almost immediate results are obtained when erroneous practices or faulty attitudes are discontinued. Whether the child in effect be over-protected or neglected, he tends to return to the normal pattern when the errors of management are removed.

Naturally some of the errors can not be removed, but the parents can be taught how to have a happier and more healthful relation to their child. Parents can be shown that their children's bad habits, emotional imbalance, and abnormal physical growth are due to the failure to recognize that physical and psychological needs are inseparable. And parents may be shown that these needs can be supplied only in a pleasant environment, and by parents who radiate happiness and confidence.

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Management of Congenital Absence of the Vagina*

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This condition has interested me for a number of years. Perhaps because I have had several cases. There are less than 500 cases reported and it is said that the condition is found once in 5,000 cases. I believe it to be more common than this, and probably in the future, due to education of the lay public, and the rapid decline in false modesty, more of these women will seek correction of their deformity.

There has always been a great deal of dispute over the embryological development of the vagina. It is agreed that the upper two-thirds in all probability arise from the Mullerian Duct system. Toward the end of the first trimester of prenatal life the ducts fuse, and the septum becomes absorbed, to form the vagina. If this fails the condition of congenital absence of the vagina occurs.

Nagel on the basis of his study of a large series of human female embryos, from 11 mm in length to term, concluded that the entire vagina and hymen are purely of Mullerian origin. Other theories are: The vagina is derived from the Mullerian ducts in the upper two-thirds, but the lower end is formed from the Wolffean ducts. Another is that the vagina and hymen are totally derived from the urogenital sinus. A fourth theory is that the vagina is mainly derived from the Mullerian ducts but the lower end as well as the hymen is formed from the urogenital sinus.

We do know there are cases where there is a shallow-pocket vagina with an absence of the upper vagina and uterus. On the other hand there have been many cases where the uterus, cervix and upper vagina were present and normal except the lower vagina was absent and therefore no opening to the outside, this condition being usually diagnosed as an atresia.

However, I question just how much importance should be placed in this developmental dispute. The condition exists, and we know that it can be corrected safely and usually successfully.

I would like to review briefly the treatment of such cases. In searching the literature one finds no settled opinion as to a universally accepted corrective procedure, either surgical or otherwise.

Considering the surgical corrections, there are a number of plans offered. The rather formidable operations of Baldwin[1] and More in which a loop of small bowel is transplanted between the bladder and the rectum, to be used as a vagina. This procedure is still done occasionally in spite of its high mortality (10 to 20 percent) probably because of the unsatisfactory results of some skin graft procedures.

Another plan is the multiple small free grafts advocated by Heppener[2], Kirschner[3] and Wagner, and Flynn[4]. These are placed in a "made" pocket between the bladder and rectum and held there for two weeks by a mould and then the opening is kept open by intermittant dilatation.

The pedicle grafts are advocated by Grad[5], Frank and Geist[6], and Ward[7]. This plan comprises a full thickness graft taken from the inside of the thighs and formed into a tube which is inserted into a preformed vaginal cavity. However, this procedure is a long drawn out plan requiring a four or five stage operation, over a period of months, thus prolonged hospitalization, and too, is somewhat mutilating to the thigh, requiring post operative skin grafting.

McIndoe and Banister[8] recently described a plan which seems relatively simple and comparatively safe. Here a vulcanite mould, the shape of a distended vagina is covered with a one piece razor thin graft nine and one-half inches long and two and one-half inches wide, taken from the thigh, and inserted in a pre-formed vaginal cavity. The labia minora freshened and sutured across its lower end, leaving a small hole anteriorly just behind the meatus for drainage. Sutures were removed in ten days, but the mould was left in for three and one-half months, the patient having been sent home in the meantime. A glass vaginal rest was worn each night thereafter for six weeks. The resultant vagina was five inches by two inches.

Counseller[9] of the Mayo Clinic has patterned his operation after McIndoe's, with several very good results. Wharton[10] advocates the obdurator but believes the skin grafts unnecessary if the preformed cavity be kept open. I think this is the secret of success in any of these operations. The opening must be kept dilated, because if not, con-

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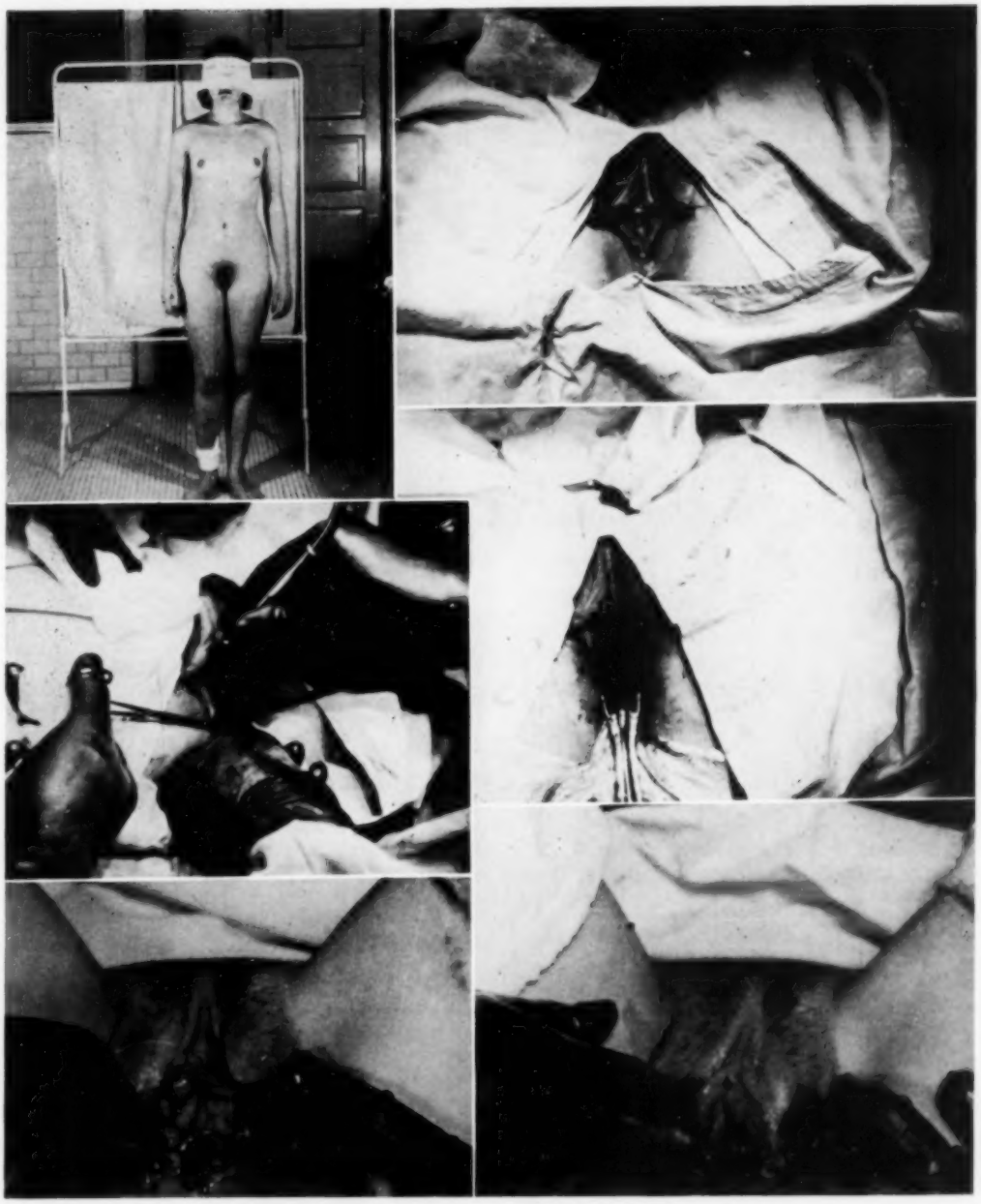

Figure 1 (top, left)—17-year-old, well developed female, secondary sex characteristics normal.

Figure 2 (top, right)—showing absence of vagina, and normal external genitalia; labia sewed back.

Figure 3 (center, left)—Sound in bladder, one finger in rectum, cleavage plane between being desected upwards bluntly.

Figure 4 (center, right)—Cavity between rectum and bladder completed; five and one-half inches deep.

Figure 5 (lower, left)—Hollow tube mould in place and sutured to labia minoria.

Figure 6 (lower, right)—Result at the end of three weeks, with the tube out.

traction will inevitably occur. This brings up the point, would it not be better to operate these patients after their marriage. However, if not married, it should be impressed on them that they must wear some type of mould or obdurator constantly for six months and at regular frequent intervals thereafter. These statements are born out by the three cases which I shall report, two of which were not operated.

CASE REPORTS

Case 1. (R.G.). Admitted Feb. 16, 1938. Discharged March 16, 1938, University Hospital. This white female, age 24, had been married seven months. States that at the age of 13 years she developed cyclic attacks

of pain of definite regularity. At no time has she had any passage of blood or mucus from the genitals. The patient further stated that prior to her marriage she had no knowledge of any abnormality of development but discovered the absence of the vagina afterward. She admitted experiencing normal sexual excitement and thinks she has had a "climax" on several occasions.

Examination revealed: A normally developed woman of 24 years, with typical feminine contour and hirsutes, well developed breasts. External genitalia normally developed to gross inspection, typical feminine hirsutes, clitoris and labia normal. The hymen was normal to inspection but closer examination revealed no opening. Rectal examination showed no evidence of vagina. A pouch could be produced by deep pressure against hymenal dimple. A rugimentary band, (evidently an embryonic remnant of fusion of the Mullerian ducts,) could be palpated in the region where the cervix should have been. Both ovaries were palpable in their normal location.

IMPRESSION: 1. Congenital absence of vagina and uterus. 2. Cyclic ovulatory pain.

A possible surgical correction was explained to patient and family but was deferred because patient's husband was then confined to a mental institution but was to be discharged in one month. She did however consent to a pelvic laparotmy for removal of appendix and closer examination of internal genitalia. She was operated March 4, 1938, and the following findings were recorded: The appendix was elongated, distended, and markedly injected. This was removed. Both tubes were present and normal extending down into pelvis and fusing in a fibrous band, apparently a remnant of the Mullerian ducts. Both ovaries were well suspended on each side and contained several follicular cysts, which were not opened. She made an uneventful recovery and was discharged on the twelfth post operative day. She returned seven months later and stated that marital relations were much more satisfactory and wondered if any further operation would be necessary. Examination revealed a vaginal pouch fully three and one-half inches deep and two inches wide lined with moist mucus membranes, which could be made deeper without causing pain by applying pressure. She was advised that it could not be improved upon by surgical measures.

Case 2. (M. D). This white girl, age 18, came to the Out-Patient Department with a history of never having menstruated. She had never experienced any cyclic symptoms of pain or cramping. Examination revealed a normally developed female of 18 years, attractive in appearance, with normal feminine contour of breasts, hips, extremities, and normal hirsutes. The external genitalia

Figure 7. Interior of pelvis as found in three cases, showing an absence of uterus.

were normal. There was no opening at the hymen dimple. Rectal examination revealed an absence of vagina, a transverse rudimentary band where the uterus should have been. The ovaries were palpable in the cul-de-sac. Deep pressure in hymenal region could formulate a pouch about one inch deep.

Endocrine therapy in the form of anterior pituitary like hormone, oestrone, and desiccated thyroid, was given in the hopes of stimulating vaginal mucosa, and at the time daily dilatation of vaginal pouch was done. Surgical correction was ruled out by family prejudice. She remained in the hospital for two months and the forcible dilations were made every day. At the end of this time there was a vaginal pouch two and one-half inches deep and indications that it would deepen should patient marry and have marital relations. She returned to the Hospital in six weeks with acute appendicitis. A midline incision was made and the following findings recorded. The bladder dome was advanced unusually high on parietal peritoneum. The ovaries were normal in size and prolapsed in the cul-de-sac. The right tube was normal except that it was unusually large. Both tubes were united at the proximal ends by a rudimentary band of fibrous tissue. The uterus and cervix and vagina were absent. The ureters were found to merge at a point just below the central point of rudimentary Mullerian remnant, thus making it impossible to penetrate through to the previously "made" vagina without injuring bladder or ureters. The appendix was found bound down with a large bulbous tip, and showed gross evidence of acute infection. Appendectomy was done. The rudimentary band was shortened by plication and then suspended to anterior abdominal wall in order to suspend the ovaries. Her convalesence was normal and follow up ex-

aminations revealed a vaginal pouch about two inches deep, thus having contracted down somewhat. But there was no scar tissue present and the lining was mucosal in character and gave the impression that under further dilatation it would deepen sufficiently for marital relations.

This patient did not marry and returned to the out-patient-department in six months. The vaginal pocket which had been made by manual dilatation had contracted down to barely more than a deep dimple.

Case 3. (G.P.). This patient, age 17, unmarried, came to the office because she had never menstruated. She also complained of severe acne over her face and body, which she attributed to this fact. Other than these findings, her past history was negative and her general physical condition was excellent. The secondary sex characteristics were well developed and the external genitalia normal. There was only a shallow dimple at the hymenal site and obviously a complete absence of the vagina. On rectal bimanual no uterus could be palpated, but here again a nub or band could be felt at the site of the cervix. Also, the ovaries could be palpated in the cul-de-sac.

An operation was done, patterned after those by McIndoe and Counseller. Two moulds were made by a dental equipment company, to be sure of the proper size, however, a large stiff rubber tube mould was finally decided upon. The reason for this was to afford better drainage. A cleavage plane was found between the rectum and bladder, and the space was carried high, to the peritoneal reflection. Dr. John Burton was kind enough to cut several large thin grafts from the inner side of the thigh, and these were sutured around the tube. The tube was then placed in the preformed vagina, and sutured to the margins of the entroitus. At the end of two weeks the tube was removed and the cavity washed with a two percent boric acid solution. The graft had taken well except in one small area which showed granulation. The tube was replaced and the patient was discharged on the twenty-first post-operative day. She was taught how to remove the tube, cleanse it and replace it. The importance of keeping the tube in situ was strongly emphasized. At the end of six weeks, the made vagina was four inches deep and one and one-half inches in diameter, and covered with soft epithelium.

CONCLUSIONS:

1. The origin of the vagina is in all probability from two embryological sources.
2. Operation for this condition today is simple and safe.
3. The most important phase of the management is to keep the preformed vagina open and dilated.
4. A tubular mould is preferred over a solid one because it affords better drainage.

BIBLIOGRAPHY

1. Baldwin, J. F.: Formation of Artificial Vagina by Intestinal Transplantation. Ann. Surg., 40:398, 1904.
2. Pemberton, F. A.: The Formation of an Artificial Vagina. Amer. Jour. Obst. and Gyn., 10:294 (Aug.) 1925.
3. Barrows, D. N.: Kirschner-Wagner Operation for Construction of Artificial Vagina. Amer. Jour. Obst. and Gyn., 31:156 (Jan.) 1936.
4. Flynn, S. W., and Duckett, J. W.: The Construction of an Artificial Vagina. Surg., Gyn., and Obst., 62:753 (April) 1936.
5. Grads, Herman: The Technique for the Formation of an Artificial Vagina. Surg., Gyn. and Obst., Vol. 54 (Feb.) 1932.
6. Frank, R. T., and Geist, S. H.: The Formation of an Artificial Vagina by a New Plastic Technic. Amer. Jour. Obst. and Gyn., 14: 7;2 (Dec.) 1927.
7. Ward, G. G., Not published.
8. McIndoe and Banister: Jour. of Obst. and Gyn. of British Empire. (June) 1938.
9. Counseller, V. S.: Congenital Absence and Traumatic Obliteration of the Vagina and its Treatment with Inlay Thiersch Grafts. Amer. Jour. Obst. and Gyn: 35:632 (Oct.) 1938.
10. Wharton, L. R.: A Simple Method of Construction of a Vagina. Ann. Surg., 107:842 (May) 1938.

DISCUSSION

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I have enjoyed Doctor Sadler's paper and I wish to compliment him upon his excellent manner of presentation of a delicate subject. My association with him in the management of one of the cases reported was in an advisory capacity, in the consideration of the lining of the newly formed vaginal cavity.

The usual procedure in the lining of cavities elsewhere in the body is by means of a "Stent Graft," but I felt that in this instance such would not be adequate.

After reviewing the literature upon the subject and going over the various methods previously reported, I was of the opinion that none of them was completely satisfactory.

In brief, the problem presented to me was the lining of a potential cavity in a region impossible to thoroughly prepare pre-operatively; secondly, when this potential space had been surgically made, it was so situated that absolute immobilization was impossible; thirdly, since it had been freshly dissected out, there would of necessity be some oozing and serious discharge which would require drainage.

I evolved the idea of using a semi-rigid rubber tube one inch in diameter and five inches in length. A split graft taken from the inner side of one of the thighs was then sewed skin side next to the tube, leaving the fresh side exposed. This was then inserted into the space previously prepared, and the exterior end of the tube was anchored to the labia by sutures. I felt this arrangement would bring the skin in fair approximation to the tissues that we were endeavoring to cover; secondly, that it would permit some movement without danger; thirdly, since the area was being left open, serous discharges would have exit; and lastly, it would maintain the surgically created cavity as a cavity and not allow the tissues to collapse and grow together.

Heparin: Its Practical Use in Thrombosis and Embolism*

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Recently there has come to our attention a therapeutic agent which offers possibilities in the difficult problem of prevention and treatment of thrombosis and embolism. This substance is heparin.

Heparin is not a new substance[1]. In 1916 McLean in Professor Howell's laboratory while investigating the thromboplastic activity of the phosphatides cuorin and jecorin in the heart and liver tissue, inadvertently discovered that the cuorin preparations had anti-coagulating properties. This finding aroused Howell's interest so that he and Holt set out to produce a stable preparation and to determine the chemistry of the anticoagulant. They were able to isolate from the liver a phosphatide having coagulation retarding properties which they called heparin to indicate its origin from the liver.

Besides its presence in the liver and muscle tissues heparin has been found in practically all the tissues of the body. Jorpes has shown that the basophilic granules of the mast cells of Ehrlich contain considerable amounts of heparin[2]. It is interesting to note that large numbers of these cells are found beneath the capsule of the liver[3]. These cells are particularly abundant around the small blood vessels without muscular coats and the capillaries. Therefore, if we can assign a secretory activity to these cells, then their anatomic location would suggest that perhaps heparin is the physiological anti-coagulant of the body[4]. To further substantiate this idea minute quantities of heparin can be isolated from normal plasma but none is obtained from the serum of clotted blood[5].

Experimental work has continued in an effort to determine the exact structure of heparin. This has not been successful, although a crystalline barium salt of high potency has been synthesized. Theoretically it has been assigned a molecular weight of 628[6]. It is thought that heparin is a compound of variable structure, probably a mucoitin poly sulfuric ester[7]. The higher esters seem to be more potent.

The question of its action is unsettled. Whether it is an antithrombin, antiprothrombin, or whether it produces its effect some other place in the sequence of coagulation is not known. Howell's theory of coagulation requires the presence of heparin as a physiological constituent of the blood. He believes that heparin is an anitprothromoin which stabilizes the prothrombin, and also that heparin activates a precursor of antithrombin which is a pro-antithrombin. Therefore, in clotting, when the cephalin combines with heparin, or the antiprothrombin, then the unstable prothrombin reacts with calcium to form thrombin. If the thrombin is in excess of the antithrombin, then fibrinogen is converted to fibrin[8].

If you accept Morawitz's theory of coagulation, then the heparin probably neutralizes the action of thrombo plastin.

Mellanby thinks that it does not act as an antiprothrombin but as an antithrombin[9].

Quick believes it is an activator to a precursor of antithrombin which is albumin[10]. Without getting in the realm of physicochemistry it may be stated that Fischer believes that the effect of heparin can be explained upon a physico-chemical basis. He believes the action is that of a high-molecular colloid with a strong electro-negative charge[11]. Other investigators have thought that heparin was somewhat related to complement. Mason thinks the final analysis of heparin action is undetermined, but that it probably activates a precursor to antithrombin[12].

The fate of heparin in the body is unknown. Howell recovered heparin in the urine of a heparinized dog. Jacques insisted that it is not recovered in urine or feces in appreciable quantities. Reinert and Winterstein have shown that a "twenty percent of a heparin-like substance is excreted by the kidneys."[13] Probably its disappearance from blood can be accounted for by inactivation by serum[14].

The indications for heparin lie in vascular surgery, thrombosis and embolism, laboratory procedures and transfusions. Experimental coronary thrombosis in dogs has been prevented by its use. Best and Solandt prevented the occurrence of portal thrombosis in 90 percent of the dogs when heparin was used seven days or longer[15]. Extension of mesenteric thrombosis has been prevented in several cases[16]. Successful embolectomies, venous grafts, and arterial anatomoses have

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been reported following the use of heparin[17]. Heparinization may be instituted within a few hours post operatively with safety, provided adequate hemostasis has been secured. Bleeding diastheses represent a contraindication to its use. Cerebral hemorrhage has been reported in cases of bacterial endocarditis treated with sulphonamide drugs and heparin[18]. The reactions experienced with the older preparations have been eliminated with the newer ones.

The problem of pulmonary embolism is to a large extent the problem of preventing venous clotting. Phlibitis has been shown to respond to the use of heparin with the involved vein returning to normal much more rapidly than could be expected otherwise. The action is not clear except that probably the heparin in some fashion prevents the extension of the process while the primary involvement is healing[19]. As you know the prevention and treatment of a thrombophleibitis or a plebo-thrombosis with resultant single or multiple pulmonary emboli has been most discouraging at times. We are aware that factors such as stasis, dehydration, infection, trauma incident to surgery, obstetrics, and prolonged illnesses tend to promote venous thrombosis and subsequent embolism. However, if by prolonging the coagulation of blood we are able to check the action of these factors, then perhaps we can prevent the undesirable clotting of the blood in the veins.

The incidence of pulmonary embolism varies greatly with the statistics quoted. Murray had an incidence of 15 percent in 300 cases. Fortunately, 80 percent of the patients with clinical and radiological evidence of pulmonary embolism recover. Statistics have been accumulating to show that heparin does give the patient additional protection against such an accident. Murray states that of the 440 patients treated in the hospital with heparin that thrombosis and embolism did not occur[20]. Those patients having thrombosis at the time of administration of heparin showed no extension of the process.

Crafoord reports no sign of thrombosis in 117 cases of 126 post operative cases[21]. Other reports are equally as encouraging.

Heparin is not the ideal method of prevention and treatment of thrombosis and pulmonary embolism, and should not be used to the exclusion of other accepted forms of therapy. It will not affect thrombi already formed, but it does tend to prevent further growth. Furthermore, it does not seem applicable to the sudden massive pulmonary embolus.

Heparin may be given subcutaneously, intramuscularly, or intravenously. It is inactive when given by mouth. A combination with Benzidine prolongs its action. Protamine renders it inactive and could conceivably be used as an antidote[22]. Heparin may be used locally, regionally, or generally. It may be used continuously or at intervals. At present the intravenous route with a continuous saline or glucose drip seems the method of choice.

The duration of treatment is quite important. In those patients where the development of venous thrombosis is considered, it has been shown that in 1,260 cases, of which 938 were diagnosed clinically as thrombo-phlibitis, post operative venous thrombosis developed as early as the second day and as late as on the 115 day, the average being the twelfth day[23]. Also Barker, Nygaard, Walters and Priestley have shown that the time interval between the first and last embolus when there were multiple emboli is less than ten days in four-fifths of the cases, also that cases having more than one embolus had a mortality rate of approximately 60 percent.[24] It would seem, therefore, that heparinization should be continued ten days to two weeks, although there are a few individuals who may require more than one administration of heparin.

There is no set rule as to the amount of heparin to be given. This will vary with the patient. Also the amount will vary with the same patient from time to time. The product used will alter the quantity needed, although each product is uniform in its potency. Maximum action is reached within two minutes by intravenous injection, but only in two to four hours by other methods. Repeated large doses may accelerate coagulation[25]. Murray has suggested that venous coagulation be maintained between 15 and 20 minutes, although further increase in the coagulation time does not appear to be harmful. Water intoxication must be guarded against[26].

The following case will illustrate some of the problems of heparin administration.

The patient was a 39 year old white female who was delivered of her second child 16 years following the birth of her first one. The post partum course was uneventful. She had had, however, with the first pregnancy a thrombophleibitis which had left a residual swelling in the left leg. During her second pregnancy there was a slight increase in the swelling of that leg but no pain nor discomfort. Eight weeks following the delivery the first demonstrable pulmonary embolus occurred. Previous to this she had been active without any subjective or objective evidence of active periphleibitis, phleibitis, or thrombosis.

The patient had a subsequent stormy course finally becoming convalescent in slightly less than two weeks. The second

pulmonary episode occurred 20 days after the first. In hope of preventing additional emboli it was decided to heparinize the patient. Therefore, heparin was started as a continuous intravenous drip of normal saline approximately three days after the second pulmonary embolus had occurred. The coagulation time of the blood was seven minutes by the Lee and White method, but there was very marked and rapid clot retraction. Also there was a peculiar streamer or tail of fibrin, red cells and platelets attached to the body of the clot. It was felt that this rapid clot retraction and unusual formation of the clot probably reflected some increased tendency of the patient's blood to clot. Arbitrarily 60,000 units of heparin were added to 1,000 c c of normal saline and the rate set at 20 drops per minute. The heparin unit in this being Roche-Organon Liquaemin, which was standardized as the quantity of heparin required to keep one cubic centimeter of recalcified citrated beef plasma liquid for four hours at 37 degrees centigrade.

Frequent adjustment of the rate of flow and the quantity of heparin was necessary. In spite of our efforts the coagulation time did not remain uniform. The beginning coagulation ranged from five to 30 minutes, while complete coagulation was noted from six to 90 minutes. However, it must be noted that the coagulation time became more stable when 80,000 units of heparin were used in a liter of normal saline, and the rate set at 20 drops per minute. Nevertheless, it was necessary to check the coagulation time frequently. Upon one occasion the coagulation time dropped to two and one-half minutes and six minutes—a definitely shortened coagulation time. This occurred, unfortunately, when our supply of heparin became exhausted. It was noted approximately ten hours after stopping the heparin. Fortunately, the patient suffered no ill effects and we were able to resume treatment within 11 hours. This hyper coagulability is contrary to the experience of others who state there is no negative phase after discontinuing heparin. From the sixth day of administration of heparin the patient was allowed to be up with the intravenous drip running, as is recommended. The patient experienced no particular discomfort from the procedure after the second or third day. Heparinization was continued for 242 hours during which time 1,194,000 units of heparin in 18,430 c c of normal saline were used. The intravenous fluid intake was kept below any critical level.

As to the toxic manifestations, the only ones experienced by the patient were nausea and vomiting. On the third day she was nauseated. On the fourth day she vomited twice. After the fourth day there was no further nausea nor vomiting. No hematuria was noted, although Priestley, Essex, and Barker state that in several of their cases transient hematuria was observed[27].

The coagulation of the blood rapidly returned to normal after heparin was discontinued and no changes attributable to the heparin were observed. To date the patient has remained well. It is felt that heparinization in this case was of definite value, perhaps even life saving.

In conclusion I should like to state that heparin is a valuable adjunct to the prevention and treatment of thrombosis and embolism. It is not to be supposed, however, that heparin is to be used to the exclusion of other accepted means of therapy. Heparin is a safe non-toxic substance when used under controlled conditions, and as yet the coagulation time remains the essential check on the degree of heparinization.

BIBLIOGRAPHY

1. McLean, Jay, The Thromboplastic Action of Cephalin, American Journal of Physiology, 41:250, 1916.
2. Jorpes' Monograph on Heparin, pages 33-34.
3. Jorpes' Monograph on Heparin, page 35.
4. Jorpes' Monograph on Heparin, page 39.
5. Howell, W. H., The Purification of Heparin and Its Presence, American Journal of Physiology, 71:553, 1925.
6. Grimberg, A. and Krauss, Properties and Uses of Heparin, Especially as an Anti-Coagulant, and in the Preservation of Blood for Transfusion, Presse Med., 47:158-161, Februray 1, 1939.
7. Jorpes quoting from M. F. Mason, Heparin: A Review of Its History, Chemistry, Physiology and Clinical Applications, Surgery, 5:451-465, March 1939.
8. Howell, W. H., quoting M. F. Mason, Heparin: A Review of Its History, Chemistry, Physiology and Clinical Applications, Surgery, 5:541-465, March 1939.
9. Mellanby quoting M. F. Mason, Heparin: A Review of Its History, Chemistry, Physiology and Clinical Applications, Surgery, 5:451-465, March 1939.
10. Quick quoting M. F. Mason, Heparin: A Review of Its History, Chemistry, Physiology and Clinical Applications, Surgery, 5:451-465, March 1939.
11. Fischer, A., quoting from Jorpes' Monograph on Heparin, page 26.
12. Mason, M. F., Heparin: A Review of Its History, Chemistry, Physiology and Clinical Applications, Surgery, 5:451-465, March 1939.
13. Reinert and Winterstein, Contribution to Study of Heparin, Arch. Int. Pharmacodynam, 62:47-68, 1939.
14. Schmitz, A. and Kuhl, L., quoting from M. F. Mason, Heparin: A Review of Its History, Chemistry, Physiology and Clinical Application, Surgery, 5:451-465, March 1939.
15. Best and Solandt quoting Murray, Heparin in Surgical Treatment of Blood Vessels, Archives Surgery, 40:307-325, February 1940.
16. Murray, G., Heparin in Surgical Treatment of Blood Vessels, Archives Surgery, 40:307-325, February 1940.
17. Murray, G., Heparin in Surgical Treatment of Blood Vessels, Archives Surgery, 40:307-325, February 1940.
18. Fletcher, C. M., Subacute Bacterial Endocarditis Treated With Sulphapyridine and Heparin, Lancet, 17:608, October 26, 1940.
19. Murray, G., Heparin in Surgical Treatment of Blood Vessels, Archives Surgery, 40:307-325, February 1940.
20. Murray, G., Heparin in Surgical Treatment of Blood Vessels, Archives Surgery, 40:307-325, February 1940.
21. Crafoord quoting Jorpes' Monograph on Heparin, page 75.
22. Chargaff, E. and Olson, K. B., Studies on Chemistry of Blood Coagulation; Studies on Action of Heparin and Other Anticoagulants. Influence of Protamine on Anticoagulant effect in Vivo, Journal of Biological Chemistry, 122:153-167, December 1937.
23. Barker, N. W., Nygaard, K. K., Walters, W., and Priestley, J. T., A Statistical Study of Post Operative Venous Thrombosis and Pulmonary Embolism, III. The Time of Occurrence During the Post Operative Period, Proceedings of the Staff Meetings of the Mayo Clinic, 16:17-21, January 8, 1941.
24. Baker, N. W., Naygaard, K. K., Walters, W., and Priestley, J. T., A Statistical Study of Post Operative Venous Thrombosis and Pulmonary Embolism,III. The Time of Occurrence During the Post Operative Period, Proceedings of the Staff Meetings of the Mayo Clinic, 16:17-21, January 8, 1941.
25. Reinert, M. and Winterstein, A., Contribution to the Study of Heparin, Arch. Int. Pharmacodynam, 62:47-68, 1939.
26. McClure, R. D., Lam, C. R., Heparin, Journal of American Medical Association, 2085-2089, May 25, 1940.
27. Priestley, J. T., Essex, H. E., Baker, N. W., The Use of Heparin in Prevention and Treatment of Post Operative Embolism, Proceedings of the Staff Meetings of the Mayo Clinic, 16:60-64, January 22, 1941.

• THE PRESIDENT'S PAGE •

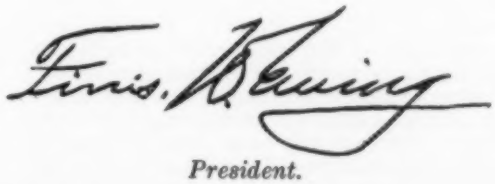
Another summer has passed and with its passing the ranks of our profession in the smaller communities are being reduced, both by death and the calling into the service of the United States Government an increasingly large number of younger doctors.

For many reasons the practice of medicine in the smaller communities is unattractive to the young doctor. He does not have easy access to hospitalization and the trained nursing care for his patients that he has been trained to depend on and which he thinks is absolutely necessary.

There can be no denying the fact that refinements and improved methods of practice that are only available in our hospitals are wonderful adjuncts to practice of medicine; so is the twelve-cylinder Cadillac more efficient and more comfortable than the Ford, but there can be no refuting the fact that there is still a very large and very definite need for the Ford and there will always be those who use it. Likewise, there is a very great need in the smaller communities for the well trained doctors who are willing to practice their profession personally and render to those who cannot afford, or to whom hospitals and nurses are not available, that kind of medical service they so sorely need.

There has developed a habit among our young graduates to congregate in the larger cities which results in crowding the profession in some localities and producing scarcity in others. This is admittedly a bad situation. It encourages irregular and unethical practices and has a decidedly evil effect upon the public mind. It may justify the charge that is sometimes heard that we are selfish and commercial and that the cost of medical service is too great.

There is a remedy for this situation and it behooves our profession to look for this remedy and apply it.



President.

EDITORIALS

EDUCATING THE PUBLIC

Living and practicing his profession, the average doctor consciously or unconsciously becomes a great educator. As a rule, his influence in the community is more potent than he suspects. It conditions home life and often favorably alters environment for the developing child. It may follow the youth into highschool and college; into the professions and varied business careers.

Under the present conditions of life, the physician is not doing his full duty as an educator until he has instituted a planned personal program which includes active participation in all movements designed to improve community health and to prepare the public for the stress and strain of modern life, which has been so obviously influenced and complicated through technological developments.

Future generations should be fortified against the multiplied dangers of this fast-going age. In helping to bring a child normally and logically from birth to maturity, we should never forget that from the beginning to the end of life, his behavior pattern, whether leading to success or failure, is wholly dependent upon two sets of factors. These are (1) hereditary, and (2) environmental. For the individual or the generation under consideration, the hereditary factors are fixed, but the environmental factors are constantly changing and to serve our purposes, they may be modified to some extent through voluntary action.

In a given case, the family doctor, better than anyone else, should know how to appraise the hereditary factors and how to fortify them against the exacting demands of environment, and how to alter the latter in so far as alteration is possible to meet individual needs. The imperative demand for such effort, with a liberal plan for cooperation, is suggested by the increasing calls for more beds in hospitals for nervous and mental cases, the high incidence of nervous instability, or alcoholic insanity, and the mounting roll of the ne'er-do wells and roving derelicts, all suggesting nervous instability and maladjustment.

In Europe today we are witnessing a "revolution of nihilism," as a result of widespread psychological maladjustment and moral insecurity. This has made it possible for merciless dictators to enslave the masses with the prospect of nothing in return, except unyielding coercion in material things and freedom from all religious, ethical and sexual inhibitions. From a moral viewpoint, obviously the German people are now well on the way back to the Pleistocene Age. Evolution is slow and difficult, but devolution may be dangerously swift.

In our own country it may be said that this moral instability is observed in the growing disregard for traditional inhibitions and the craze for freedom of expression. Also in many of the labor union controversies and unreasonable behavior during strikes; in the waning self-sufficiency and integrity as shown by the alarming complacency of those on government relief and the growing evidence of widespread disloyalty and indifference toward other people's rights and privileges, including their material possessions.

Every doctor should confront his own soul with the significant question: Am I doing what I can toward the stabilization of our national life through the building of character, capable of level vision and normal response in the presence of a revolutionary environment?

This is a difficult assignment. Giving a sound education to the newer generations is not going to be easy "trucking." At a high peak in Greek civilization, they killed Hippocrates for teaching the young men of his day the logical application of reason to their daily problems.

In connection with the above discussion, your attention is called to an important booklet, prepared by the Joint Committee on Health Problems representing the National Education Association and the American Medical Association, and distributed by the American Medical Association. Every doctor should have this booklet and should see that a copy is placed in the hands of each school-teacher in his district, and made available to parents in the homes where serious psychological conflicts exist.—Lewis J. Moorman.

THE CONTROL OF AMERICAN MEDICINE

The following pertinent comment by Doctor Rice, Shawnee, is being reprinted from the Pottawatomie County Medical Society Bulletin for June, 1941:

On April 4th a Federal Jury in Washington, D. C., found the American Medical Association guilty of a criminal conspiracy to restrain trade. As far as a settlement of the issues is concerned the verdict is without substance or meaning, but the issues were

clarified and defined and the purpose and objectives of the prosecution were apparent. The attainment of the objectives would destroy the structure and pattern of medical service as it has been known and accepted in the United States.

Some of the issues involved in this action are: 1. The exclusive right of physicians to practice medicine. Presumably a layman or a lay organization should have the legal right to provide medical service.

2. The right of physicians to control or influence the qualifications of physicians on hospital staffs or the qualifications of physicians to be granted courtesy privileges in hospitals.

3. The right of physicians to control or influence conditions in hospitals under which training is provided.

4. The right of physicians to determine educational and ethical standards that shall qualify individuals for the rendering of medical service.

These are basic rights. They are essential to the safeguarding of the public. They are so fundamental that they have been accepted without concern or question.

There has been no compulsion in the controls of American Medicine, the codes and principles which govern the providing of medical services having been evolved tediously over a period of more than a century.

Now the legality of these codes and principles has been questioned. The final solution will effect every practicing physician in the United States. If it is finally decided that laymen or lay organizations can provide medical service the entire structure of medicine as we know it can be destroyed.

If doctors of medicine are denied the right to determine or importantly influence the educational standards for medical students and the nature and quality of interne training, the result will be an army of quacks with the individuals competing in the open market for the patronage of the ailing and sick.

The sane and constructive solution of this important problem should be considered under two important parts:

1. American medicine must be given authority from the court of final jurisdiction for a code of conduct. The authorization must define the areas wherein controls can be established and must define the nature and extent of such controls. Regardless of time, energy, or expense involved there should be no compromise until all of the issues have been settled by the authority of the court of final jurisdiction.

2. The public must be made aware of its vital interest in this all important issue. In the final analysis the public's opinion of the quality and effectiveness of medical service will become the deciding factor in the settlement of the problem. The public is uninformed and without knowledge it is not competent to render an impartial decision. The public must be enlightened on the facts and this is the important, if gigantic, task and responsibility of every practicing physician in the United States.—E. E. Rice, M.D.

INFANTILE PARALYSIS

The following taken from the report of the *"Georgia Warm Springs Foundation for Infantile Paralysis"* will, I am sure, be of interest to the Medical Profession as we are vitally concerned about both the early treatment of this disease and the treatment of the sequellae following the acute stage.

We are, no doubt, interested as to the distribution of finances and the means of support of the Foundation. The following will clear up this matter and this is a quotation from the Foundation: "Some confusion has arisen in the minds of the public as to the relationship between Georgia Warm Springs Foundation, founded in 1927, and The National Foundation for Infantile Paralysis, Inc., organized in 1938.

These two Foundations are entirely separate and distinct.

It was because of the experience gained from the work done at Georgia Warm Springs Foundation that the National Foundation was created. The occasion and the reason for organizing The National Foundation for Infantile Paralysis, Inc., cannot be better described that it was by President Roosevelt in a statement which he made on September 23, 1937, sponsoring the creation of the National Foundation, which reads as follows:

"My own personal experience in the work that we have been doing at the Georgia Warm Springs Foundation for over ten years, leads me to the very definite conclusion that the best results in attempting to eradicate this disease cannot be secured by approaching the problem through any single one of its aspects, whether that be preventive studies in the laboratory, emergency work during epidemics, or after-treatment. For over ten years at the Foundation at Warm Springs, Georgia, we have devoted our effort almost entirely to the study of improved treatment of the after-effects of the illness. During these years other agencies, which we have from time to time assisted have devoted their energies to other phases of the fight. I firmly believe that the time has now arrived when the whole attack on this plague should be led and directed, though not controlled, by one national body. And it is for this purpose that a new national foundation for infantile paralysis is being created.

"As I have said, the general purpose of the

new foundation will be to lead, direct, and unify the fight on every phase of this sickness. It will make every effort to insure that every responsible research agency in this country is adequately financed to carry on investigations into the cause of infantile paralysis and the methods by which it may be prevented. It will endeavor to eliminate much of the needless after-effect of this disease—wreckage caused by the failure to make early and accurate diagnosis of its presence.

"We all know that improper care during the acute stage of the disease, and the use of antiquated treatment, or downright neglect of any treatment, are the cause of thousands of crippled, twisted, powerless bodies now. Much can be done along these lines right now.

"The new foundation will carry on a broad-gauged educational campaign, prepared under expert medical supervision, and this will be placed within the reach of the doctors and the hospitals of the country. The practicing physician is in reality the front line fighter of the sickness, and there is much existing valuable knowledge that should be disseminated to him.

"And then there is also the tremendous problem as to what is to be done with those hundreds of thousands already ruined by the after-effects of this affliction. To investigate, to study, to develop every medical possibility of enabling those so afflicted to become economically independent in their local communities will be one of the chief aims of the new foundation."

FINANCES

"*The Georgia Warm Springs Foundation* from 1927 to 1934 met its annual operating costs in excess of its income chiefly with contributions from individuals and charitable organizations.

In 1934, the net proceeds of the first Celebration of the Honorable Franklin D. Roosevelt's Birthday were given to the Georgia Warm Springs Foundation for the benefit of the victims of the after-effects of infantile paralysis.

In 1935, it received no part of the proceeds of the Celebration held that year.

In 1936 and 1937 the Foundation received 30 percent of the proceeds, 70 percent being retained in the various communities where raised to be used locally for the aid of sufferers from poliomyelitis.

In 1938, all of the net proceeds of the Birthday Celebration were given to the National Foundation for Infantile Paralysis.

Since 1938, 50 percent of the net proceeds of all Birthday Celebrations has been left in the counties where raised and the remaining 50 percent has gone to the National Foundation for Infantile Paralysis."

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ASSOCIATION ACTIVITIES

OFFICE OF CIVILIAN DEFENSE APPOINTS MEDICAL ADVISORY COMMITTEE

Through the office of Director of Civilian Defense has come the announcement of the appointment of a Medical Advisory Committee to assist the Medical Division of OCD.

This Advisory Committee, composed of Dr. George Baehr, New York, Chairman; Dr. Robin C. Buerki, Madison, Wisconsin; Dr. Elliott Cutler, Boston, Massachusetts; Dr. Oliver Kiel, Wichita Falls, Texas; Dr. Albert McCown, Washington, D. C.; and Dr. Fred Rankin, Lexington, Kentucky, will assist the Office of Civilian Defense in working out the problems of medical care for the civilian population in emergencies.

It is interesting and gratifying to note that the membership of the Advisory Committee is made up of outstanding medical men and includes the President-Elect of the American Medical Association, Dr. Fred Rankin.

100,000 Volunteer Nurses' Aides To Be Trained During Next 12 Months

Director of Civilian Defense, Mayor F. H. La Guardia, in announcing the appointment of the Medical Advisory Committee also announced that during the next twelve months the OCD would cooperate with the American National Red Cross and the major hospitals of the country in sponsoring a training program for Volunteer Nurses' Aides.

This training course will supply the trained nurse with intelligent assistants and is designed to increase the effectiveness of the trained nursing personnel. The course will be limited to women between the ages of 18 and 50 who have at least a high school education, or its equivalent, and are physically fit.

OKLAHOMA CLINICAL CONFERENCE TO MEET OCTOBER 27-30

The officers and committees of the Oklahoma City Clinical Society have been very busy during the past ten months arranging a program for the Eleventh Annual Conference of the Society, October 27-30. To this end they have secured an imposing array of guest speakers, including outstanding teachers in practically every field of medicine. These speakers are;

Dr. Fred W. Rankin, President-Elect of the American Medical Association, and Clinical Professor of Surgery, University of Louisville; Dr. Walter C. Alvarez, Professor of Medicine, University of Minnesota; Dr. A. Bruce Gill, Professor of Orthopaedic Surgery, University of Pennsylvania; Dr. L. Emmett Holt, Jr., Associate Professor of Pediatrics, Johns Hopkins Medical School;

Dr. Verne C. Hunt, Clinical Professor of Surgery, University of Southern California School of Medicine; Dr. Howard T. Karsner, Professor of Otolaryngology and Head of Department of Otolaryngology, Tulane University Medical School; Dr. Perrin H. Long, Professor of Preventive Medicine, Johns Hopkins Medical School; Dr. John H. Musser, Professor of Medicine, Tulane University Medical School;

Dr. Alton Ochsner, Professor of Surgery and Head of Department of Surgery, Tulane University Medical School; Dr. Earl D. Osborne, Professor of Dermatology and Syphilology, University of Buffalo School of Medicine; Dr. E. D. Plass, Professor and Head of Department of Obstetrics and Gynecology, University of Iowa Medical School; Dr. Wendell G. Scott, Assistant Professor of Clinical Radiology, Washington University School of Medicine;

Dr. Albert O. Singleton, Professor of Surgery, University of Texas Medical School; Dr. Fred J. Taussig, Professor of Clinical Obstetrics and Gynecology, Washington University School of Medicine; Dr. Gilbert J. Thomas, Associate Clinical Professor of Urology, Medical and Graduate Schools, University of Minnesota; Dr. Henry P. Wagener, Associate Professor of Ophthalmology, Mayo Foundation, Graduate School of Medicine, University of Minnesota.

The Post Graduate Committee has arranged 24 symposia to be presented by local physicians and discussed by distinguished guest speakers. This part of the meeting has become one of its most popular features, and the rapid development of new facts and theories in the field of medicine makes these symposia timely and stimulating.

The rapid and continued growth of this meeting during its 11 years of existance has proven its worth to the profession over the Southwest. Certainly the four day period of intensive instruction can be obtained at a minimum expenditure of time and money. Guest speakers and Associate Members who have attended in the past have been impressed with the clock-like precision with which the meeting is conducted, and feel this is one of the major reasons why it is possible to gain so much knowledge in a limited time.

All sessions and commercial exhibits will be held on the lounge floor of the Biltmore Hotel. Additional information may be obtained by corresponding with the secretary at 512 Medical Arts Building, Oklahoma City, Oklahoma.

Physicians Casualty Announces New Rates

The Physicians Casulty Association of America has made a reduction in the $25.00 per week accident and health insurance, of $1.00 per year; in the $50.00 per week accident and health insurance, of $2.00 per year, and in the $75.00 per week accident and health insurance, of $3.00 per year.

Monograph Reprints Available to Doctors

The Journal acknowledges the receipt of the monographs listed below. They are reprinted from Hygeia and can be had at small cost by writing the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

1. Mental Hygiene in the Classroom. By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association. Second Printing, January, 1941.
2. Alcoholism. Alcohol provides an easy escape mechanism from life's realities. Edward A. Strecker points out what that occasional drink before lunch may lead to.
3. Infantile Paralysis. The newly isolated pure chemical vitamins give our infantile paralysis research men powerful tools that are already beginning to solve the secrets of natural immunity. By Paul deKruif.
4. Make Love a Habit. Most couples fail to stay in love because there is nothing back of their love. They have little in common, but much to prevent compatibility. They are in love with love: with themselves, but never with each other. By Paul Popenoe.
5. Hemorrhoids. By Harold Laufman.

Single copy of Number One, twenty cents.
Single copies of Two and Three, ten cents.
Single copies of Four and Five, five cents.

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PLEASANT ROOMS AN AID TO RECOVERY

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President Ewing Announces Appointment Of Special Committee

President Finis W. Ewing has appointed the following members of the Association to membership on a Committee to study Prepaid Surgical Benefits: Dr. John F. Burton, Oklahoma City, Chairman; Dr. V. C. Tisdal, Elk City; Dr. C. W. Arrendell, Ponca City; Dr. Benjamin A. Davis, Cushing; and Dr. Gifford H. Henry, Tulsa.

The appointment of this Committee is in line with the instructions from the House of Delegates at its Annual Meeting in Oklahoma City.

THE KANSAS CITY SOUTHWEST CLINICAL SOCIETY ANNUAL FALL CLINICAL CONFERENCE

For the nineteenth consecutive year, the Kansas City Southwest Clinical Society will present its Annual Fall Clinical Conference in Kansas City, Missouri, October 6, 7, 8, 9, 1941.

Fifteen distinguished guests from various cities of the United States will present phases of medical advancement with which they have been identified from research and clinical viewpoints. Clinicians from Greater Kansas City who have achieved enthusiastic approbation of their colleagues at home, and many who enjoy more than local reputation, will participate in rounding out the program for the Fall Conference.

Scientific exhibits worthy of study are being prepared by members who have the knack of reaching into your brain cells through pictorial methods and alluring statistics.

Technical exhibits upon new remedies, tried and true products, and mechanical devices of modern medicine will be displayed in greater numbers this year.

The Clinical Conference idea, pioneered in Kansas City almost twenty years ago, is now established in many cities throughout the country. The basic idea for clinical conferences is the continuing education of the physician, general practitioner or specialist, who is caring for the American Public.

The 1941 Fall Conference program is ideal for any physician who wishes to listen and acquire new ideas, restore forgotten points and polish up on useful information. Plan now to come to the Nineteenth Annual Fall Clinical Conference. If you have not received the Kansas City Medical Journal, with the tentative program of the Conference, one will be sent to you upon request.

Ophthalmology, Otolaryngology Meeting To Be Held October 19-23 in Chicago

The Forty-Sixth Annual Meeting of the American Academy of Ophthalmology and Otolaryngology will be held at the Palmer House, Chicago, October 19-23, under the presidency of Dr. Frank R. Spencer, Boulder, Colo.

The program for the meeting will include one general scientific meeting, separate programs for the two specialties, and instructional courses. Featuring the general meeting will be a symposium on vertigo, with Dr. Francis H. Adler, Philadelphia, representing ophthalmology; Dr. William J. McNally, Montreal, otolaryngology, and Dr. Bernard Alpers, Philadelphia, neurology.

Dr. Perry Goldsmith, professor of otolaryngology of the University of Toronto Faculty of Medicine, Toronto, Ont., will be the academy's guest of honor.

Among the speakers for the meeting are Dr. Alfred W. Adson, Rochester, Minn.; Dr. Albert N. LeMoine, Kansas City, Mo.; Dr. John H. Dunnington and Dr. Maynard Wheeler, New York; Dr. W. F. Petersen, Chicago; Dr. Mark J. Schoenberg, New York; Dr. Charles T. Porter, Boston; Dr. Rae E. Ashley, San Francisco; Dr. Alfred J. Cone, St. Louis, and Dr. Frederick T. Hill, Waterville, Maine.

Besides the scientific program and the scientific exhibits, the meeting will be highlighted by a motion picture program.

What . . . *19th* Annual Fall Clinical Conference, Kansas City Southwest Clinical Society

Where . . . Municipal Auditorium, Kansas City, Missouri

When . . . October 6, 7, 8, 9, 1941

Why . . . . *5* Scientific Assemblies by 15 Guest Speakers.

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• OBITUARIES •

Dr. Charles R. Silverthorne
1872-1941

Dr. Charles R. Silverthorne died July 27, 1941, at Bakersfield, Calif. At the time of his death he was 69 years old, and he left surviving him, his widow, Mrs. Mildred Silverthorne, and two daughters, Mrs. James Stokes of Woodward, Oklahoma, and Mrs. Lyman E. King, of Dallas, Tex.

His body was interred July 31, 1941, at Mount Hope Cemetery, in Topeka, Kan.

Doctor Silverthorne, a native of Kentucky, practiced surgery in Topeka, Kan., for a number of years prior to the year 1925, when he moved to Woodward and operated the General Hospital in Woodward from 1925 until 1940. He was graduated from the University of the South Medical Department, Sewanne, Tenn., in 1898.

He was a Knight Templar, a member of the Blue Lodge, and a 32nd Degree Mason.

Resolution

WHEREAS, Charles R. Silverthorne was, for more than a decade, an active and respected member of the Woodward County Medical Association, and

WHEREAS, during such period of time he was active as a physician and surgeon in Woodward, Oklahoma and during such period of time, was a leader in the medical profession and was liberal with both his time and money in the promotion of the medical profession in this community and in the alleviation of human pain and suffering, and

WHEREAS, the said Charles R. Silverthorne has departed this life and the Woodward County Medical Association desires to commemmorate his passing by an appropriate Resolution.

NOW, THEREFORE, BE IT RESOLVED by the Woodward County Medical Association, in regular meeting duly assembled on this eighth day of August, 1941, that the passing of the said Charles R. Silverthorne is a distinct loss to the Woodward County Medical Association and to the community in which he resided.

BE IT FURTHER RESOLVED that the Woodward County Medical Association takes this method of expressing to the medical profession at large and to the family of the said Charles R. Silverthorne, its deep regret at the passing of one of its leaders, and acknowledges the loss of a faithful public servant.

BE IT FURTHER RESOLVED that a copy of this Resolution be spread upon the permanent records of the Woodward County Medical Association and that a copy of this Resolution be, by the Secretary, presented to the members of the family of Charles R. Silverthorne.

Memoriam—Dr. J. R. Holliday
1880—1941

In the death of Dr. J. R. Holliday there has passed from our midst an outstanding Christian character and one of the most beloved members of the Oklahoma County Medical Association.

His father was a physician, and he was also the grandson of a physician, and there flowed in his veins all the traditions of the noblest and best ethics of his chosen profession.

After his graduation from Barnes Medical College, he first located in Duncan, Oklahoma, where he practiced for three years. He then located in Oklahoma City in 1910 and with the exception of the time he spent in army service during the World War, he worked here continuously from that date.

His life was a fulfillment of those highest qualities that have made our country great. He was loyal to his home, to his high standards of civic righteousness and his lofty ideals of right living.

No one could ever misunderstand Doctor Holliday, for he had nothing to conceal. He was a manly man and of him it could be truly said that "He loved his fellow men."—J. M. Alford.

For the local Treatment of Acute Anterior Urethritis
(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE*
Wyeth

A complete technique of treatment and literature will be sent upon request

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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2 ozs. every 3 hrs. for 8 feedings

Lactic Acid milk (dried) 5 tbs.
Water, boiled.....16 ozs.
Karo.....1⅓ tbs.
2 ozs. every 3 hrs. for 8 feedings

CONCENTRATED MIXTURES

Breast milk.....12 ozs.
Evaporated milk..... 4 ozs.
Karo..... 1 tbs.
2 ozs. every 3 hrs. for 8 feedings

Lactic Acid milk (2%)..16 ozs.
Karo..... 2 tbs.
2 ozs. every 3 hrs. for 8 feedings

FEEDING PROGRESS		
Days of Age	Drams at Each Feeding	Ounces of Feeding per 24 Hrs.
1	1	1
2	2	2
3	4	4
4	6	6
5	8	8
6	10	10
7	12	12
(8 drams = 1 ounce)		

Prematures usually thrive on Karo formulas

"MOST of the common milk mixtures have been used at various times with some degree of success —evaporated, acid and dried milks, and butter-flour mixtures. Those high in protein and carbohydrate and low in fat are the most suitable in concentrated formulas properly adapted to the limited digestive capacity of the premature. While lactic-acid milk with addition of 7 to 10 per cent by volume of Karo syrup yields twenty-five to thirty calories per ounce, evaporated milk with 5 to 10 per cent added Karo syrup is equally effective.

Processed or acid milks are advantageous because of the fine curds produced, the premature being particularly susceptible to curd indigestion. Nonfermentable carbohydrate in quantities similar to those used in normal feeding of infants may be added to any of these milks. The formula may be concentrated by decreasing the water, or adding powdered protein milk in place of extra amounts of sugar."

KUGELMASS: "*Newer Nutrition in Pediatric Practice.*"

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NEWS FROM THE COUNTY SOCIETIES

Although most of the county medical societies adjourned their regular meetings during the summer months, several continued to meet. Among these were the Pottawatomie, the Pontotoc and the Pittsburg county societies.

The Pottawatomie society met June 21 in Shawnee, then again, July 19 in Shawnee. About 12 members were present at the July meeting to hear Dr. J. E. Hughes, Shawnee, discuss "Uterine Bleeding." An excellent discussion of his topic was held.

The society met again August 16 in Shawnee with Dr. John Carson, Shawnee, as chief speaker of the evening.

Fifteen members of the Pontotoc county society attended the July meeting in Ada. A committee appointed to contact officers of the Farm Security Health Bureau reported on their meeting with the Bureau officers. Following this report, a round table discussion of the program of the Bureau was held.

Dr. R. E. Cowling, Ada, was the speaker for the August meeting, August 6, in Ada. Doctor Cowling's subject was "Ascites in Diagnosis." A motion picture on Thyroidectomy completed the program for this meeting.

Members of the Canadian county society adjourned their meetings for the summer, but used as the highlight of their summer activities the series of Postgraduate lectures on Pediatrics given by Dr. James G. Hughes, Memphis, Tennessee. The series began August 20 in El Reno.

The Pittsburg county society met with the Pittsburg County Bar Association at a barbeque supper, August 9. Attorney M. O. Counts of Hartshorne was host to the two groups at his ranch, with other members of the Bar Association acting as assisting hosts.

September 19, members of the medical society will meet for a regular business and program meeting in McAlester, with a motion picture, "Exploring With X-Rays," by General Electric, as the feature of the program.

Many of the county socities will resume their regular monthly meetings in September. Among these societies are the Woods, the Seminole, the Garvin, the Oklahoma, the Woodward, the Tri-County (Grady, Stephens and Caddo Counties), and the Washington-Nowata county societies.

Dr. Charles M. Pearce, McAlester, will discuss "F. S. A. Medical Care," and Mr. William Coulter, representative for Mead Johnson and Company, will show two talking pictures at the meeting of the Woods county society, September 30, in Alva.

The two motion pictures to be shown by Mr. Coulter are "When Bobbie Goes to School" and "Roentgen Pelvimetry."

Members of the Garvin county society will resume their meetings September 17, and members of the Woodward county society will meet again September 11 in Woodward. Programs for these two meetings have not yet been announced.

The Oklahoma County Medical Association will start its new season of meetings with a social meeting September 16, in Oklahoma City.

Another county society to resume its meetings in September is the Washington-Nowata society. Members will meet September 10.

A chicken dinner was the special feature of the Pottawatomie county society when about 15 members were in attendance at the August 16 meeting in Shawnee.

The program which was presented by Dr. John Carson was a talk entitled "Sulfanilimide Therapy" with particular attention to the sulfaguanidine treatment of ulcerative colitis.

The next meeting will be September 20 in Shawnee at which time Dr. W. M. Gallaher will be the principal speaker.

Dr. John K. Coker Will Practice In Clovis, New Mexico

Dr. John K. Coker, well-known Duncan physician, has moved to Clovis, New Mexico, where he will carry on a general practice and where he will be associated with the Clovis Memorial hospital.

Doctor Coker, who has been connected with the Weedn hospital in Duncan for the past six years, is a member of the Stephens County Medical Society and has served as secretary of that society since January, 1941.

Doctor Coker received his medical degree from the University of Oklahoma School of Medicine in 1934 and took his internship at San Diego County hospital, in California.

Important Notice

Extra copies of the post convention issue of the Bulletin of the Woman's Auxiliary are available. You may begin your subscription with this issue if you desire. It is an interesting and valuable number, containing four of the major programs of the national organization which have to do with the plans for home defense.

It is the plan of the national board to use the official publication to present all important material to the members of the Womans' Auxiliary. All issues of the Bulletin will contain, therefore, important programs and articles presenting information necessary for the efficient promotion of our Auxiliary projects.

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Opportunity for Practice

An excellent opportunity for practice awaits a physician in the town of Cheyenne, Oklahoma. Any doctor who locates there will be given full cooperation by the local Kiwanis Club, Draft Board and drug store.

Anyone interested in obtaining more information about this opportunity should write H. E. Hadlock, Hadlock Drug Store, Cheyenne.

DO YOU KNOW YOUR SULFONAMIDES?

SULFANILAMIDE

WHICH SHALL I USE FOR GONORRHEA?

SULFAPYRIDINE

WHAT'S GOOD FOR "STREP"?

WHICH PRODUCES BEST RESULTS IN PNEUMONIA?

SULFATHIAZOLE

MY PATIENT HAS A "STAPH" INFECTION—WHAT SULFONAMIDE IS MOST EFFECTIVE?

The sulfonamide compounds continue to grow in importance. Three separate drugs have been accepted by the Council on Pharmacy and Chemistry of the A. M. A. Another has been submitted for acceptance. We present on this page the "box score" on three "sulfa" drugs now in widespread use.

	Sulfanilamide N.N.R.	**Sulfapyridine** N.N.R.	**Sulfathiazole** N.N.R.
CHEMICAL NAME	(p-amino-benzene sulfonamide)	(2-sulfanilyl aminopyridine)	(2-sulfanilyl aminothiazole)
SOLUBILITY in 100 cc. of water at 37.5° C.	1480 mg.	54 mg.	95 mg.
PHARMACOLOGY Absorption	Relatively uniform and rapid.	Irregular and often poor.	Uniform—very rapid.
Distribution	In all body fluids.	In all body fluids.	In blood but poorly in other body fluids.
Excretion	Rapid.	Slower than Sulfanilamide.	Rapid.
Tendency to conjugation.	Slight.	Marked.	Moderate.
CHEMOTHERAPY ★Preferred Drug. ●Also Effective.			
Colon Bacillus			★
Dysentery Bacillus			●
Gonococcus		●	★
Lymphogranuloma Venereum	●	●	★
Meningococcus	●	★	●
Pneumococcus		★	★
Staphylococcus		●	★
Streptococcus	★	●	
HOW SUPPLIED BY SQUIBB Tablets	5 grain in bot. of 100, 500, 1000. 7½ grain in bot. of 25, 100, 1000.	0.5 gram in bot. of 50, 100, 1000.	0.5 gram in bot. of 50, 100, 500, 1000.
Powder	4 oz. Rx. bottle.	5 gram vials.	
Crystals	1.0 gram ampuls, box of 5 and 25.		5 gram vials.
Capsules		0.25 gram in bot. of 50, 100, 1000.	

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University of Oklahoma School of Medicine

Changes in the Faculty

Mrs. Ida Lucille Brown Wallace, Instructor in Bacteriology, resigned and Miss Elizabeth R. Hall has been appointed to fill the vacancy. Miss Hall holds the B.S. degree from the University of Washington and the M.S. degree from the University of Michigan. Prior to her appointment in this medical school Miss Hall was connected with the University of Michigan Health Service, Ann Arbor.

Dr. Benedict E. Abreu, Instructor in Pharmacology, has resigned to accept the appointment of Assistant Professor of Pharmacology at the University of Georgia School of Medicine. Dr. Paul W. Smith has been appointed to fill the vacancy created by the resignation of Dr. Abreu. Dr. Smith had his training at Kansas State Teachers College, the University of Wisconsin, the University of Kansas, the University of Tennessee, and the University of Illinois. For the past three years Dr. Smith was the Assistant Professor of Physiology at the University of Tennessee School of Medicine, Memphis.

Dr. Donald B. McMullen, Assistant Professor of Bacteriology, has been connected with the Department of Health of the State of Michigan during the summer where he was working on the Incidence and Control of Water Itch.

Among the improvements introduced at the University and Crippled Children's Hospitals are:

1. Air conditioning of the newborn nursery.
2. Remodeling and air conditioning of infants nursery at the Crippled Children's Hospital, and installation of individual cubicles of steel and glass for each crib.
3. Creation of premature nursery.
   There has been an increase in the number of premature infants received by the Crippled Children's Hospital for treatment during the past year. A separate room has been set aside for the premature nursery. This room now contains seven bassinets. Individual nursing techniques have been instituted and the nurses assigned to the premature infants do not render nursing service in other units while attached to the premature nursery, thus eliminating all chance of cross-infection through contamination due to technique. During the six months the premature nursery has been in operation premature mortality has been reduced over 50 percent.
4. During the past year the University and Crippled Children's Hospitals have acquired three Drinker Respirators. The Hospital purchased an adult Drinker Respirator, an infant Drinker Respirator, and a General-Collins Emergency Lung.
   An orthopedic model Drinker Respirator was received as a gift from the Oklahoma County Chapter of the National Foundation for Infantile Paralysis, Inc. This gift was made possible through the March of Dimes Campaign carried out in Oklahoma County last year.

New Superintendent of Nurses

On July 1, 1941, Clare M. J. Wangen, R.N., B.S., M.A., was appointed as Superintendent of Nurses and Director of Nursing Service. Miss Wangen graduated from the Johns Hopkins School of Nursing, received her B.S. degree from the University of Washington, and the M.A. degree from Columbia University, New York City. Among her most recent positions was that of Director of the Public Health Program of the Kellog Foundation, Superintendent of the Clifton Springs Sanatorium, Assistant Educational Director of Johns Hopkins School of Nursing, Assistant Dean of Baylor University School of Nursing, and for the past four years she has been Superintendent of Nursing and Director of the School of Nursing at the University of Virginia Hospitals.

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It's such an easy, thoughtful gesture to always offer your little patients some delicious Chewing Gum while they're waiting or when they leave the office. They just love it — and it makes a big hit with adults, too. And for such a small cost this one, friendly, little act goes a long way in winning extra good will and affection. Besides, as you know, the chewing is an aid to mouth cleanliness as well as helping to lessen tension. Enjoy chewing Gum, yourself. Get a good month's worth for your office today.

There's a reason, a time and place for Chewing Gum

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Group Hospital Service

There are sixty-six hospital service plans in the United States and Canada authorized to use the Blue Cross official symbol of approval by the American Hospital Association.

"THE BLUE CROSS PLAN" is a description employed almost universally to identify plans authorized to use this symbol of distinction and recognition. Througout the East, the term is used almost without exception. Group Hospital Service of Oklahoma is a BLUE CROSS PLAN, and in answer to many inquiries, an explanation of the BLUE CROSS EMBLEM follows:

"The Lorraine Cross is quartered in blue. This cross has been the emblem of relief to the unfortunate since medieval time. The Caduceus, or Wand of Mercury, and the Serpent of Aesculapius, has symbolized the healing art for thousands of years. The Maltese Cross has been the emblem of the Knights of Saint John of Jerusalem since 1092 A. D. and has been used for hundreds of years by the Saint John Ambulance Service. The international emblem for the relief of the sick and wounded is the Geneva (or Greek) Cross. The Urn Lamp is universally accepted as symbolic of knowledge. It is the official emblem of the Florence Nightingale Nurses. The American Eagle symbolizes the United States of America; the maple leaves, the Dominion of Canada, and the whole is supported by the Latin motto Nisi Dominus Frustra—'Without God We Can Do Nothing'."

$35,000,000. This figure refers neither to the national debt nor the armament budget, but is the amount our hospitals will receive from the Blue Cross Plans during the year 1941. Writing in the February issue of "Hospital Management," C. Rufus Rorem, Ph. D., C. P. A., Director, Commission on Hospital Service, American Hospital Association, says in part:

"On January 1, 1941, there were 66 hospital service plans approved by the Commission on Hospital Service of the American Hospital Association. These plans report a total enrollment exceeding 6,000,000 persons, as compared with 600,000 on January 1, 1937, and with only 60,000 on January 1, 1935.

During the coming year non-profit plans will pay more than $35,000,000 to the hospitals of the United States, an amount greater than the combined hospital receipts from endowment income and from community chests and councils.

No two hospital service plans are alike in detail, but they are all alike in principle. They provide for payments of equal and regular amounts by a group of individuals into a common fund, which is used, when necessary, to buy hospital service for the contributors requiring hospital care. The corporation enters into contracts with employed persons who make these regular subscriptions, also with hospitals which agree to provide service to the subscribers.

Hospital service plans must be differentiated sharply from other forms of insurance for the payment of hospital bills. Hospital plans provide service, not cash, and the essential feature of the plan is a contractual arrangement by which a group of member-hospitals agree to provide the necessary care to the subscribers and to look to the hospital service corporations for the necessary payment for the services rendered.

There are approximately 2,000 member-hospitals in the 66 approved plans with a bed capacity of nearly 225,000 which represents more than two-thirds of the bed capacity of the voluntary hospitals in the United States. It is in the voluntary hospitals that most of the service to non-profit plan subscribers is rendered, although approximately 130 local government hospitals and 160 proprietary hospitals are participating institutions in various parts of the United States."

Your Most Valued Possession

What is it? After traveling through pioneer, untrodden and experimental trails, those responsible for the development and progress of the Blue Cross program were guided in their work by the belief that the family is the most valued and cherished of any riches possessed by man. This answers all questions as to why this plan was built around and emphasizes protection to include the family. Sure, the head of the family is usually the breadwinner. But hospitalization or even medical or surgical plans were not designed for and do not provide restoration of loss of income. The purpose is to provide good, adequate and scientific care at a time when required, thereby preserving the health and perhaps the life of those cherished possessions. Then, too, it absorbs the shock of the otherwise financial burden resulting from unexpected hospital bills. Hence the Blue Cross Plan with protection for the whole family and without profit and without charity.

A daily savings of only:

2½ cents protects an individual.
2¼ cents each, protects a family of 2.
1⅔ cents each, protects a family of 3.
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1 cent each, protects a family of 5.

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Philip Morris do not claim to cure irritation but they do say this:

62.3% of the cases of irritation of the nose and throat due to smoking cleared completely on changing to Philip Morris.

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**From tests reported by Laryngoscope, Feb. 1935. Vol. XLV, No. 2, 149-154*

PHILIP MORRIS & CO., LTD., INC., 119 FIFTH AVENUE, NEW YORK

COUNTY AND STATE MUST COOPERATE TO CONTROL SALE OF RAW MILK

Unless county and state authorities cooperate with city health officials in controlling the sale of raw milk, outbreaks of milk-borne infection are bound to occur, The Journal of the American Medical Association declares in an editorial.

In 1932, the editorial states, The Journal condemned the sale and use of bootleg milk, namely milk offered for sale outside municipal limits and therefore not subject to the regulations governing the sale of milk within the municipality. Several health officers at that time were confronted with the health hazard developed by the sale of milk at roadside stands to residents of nearby cities. Often it came from farms of such insanitary condition that their product could not be offered within the city limits.

Studies by the United States Public Health Service and the former American Child Health Association have demonstrated again and again that milk-borne epidemics are due almost exclusively to raw milk supplies. In many parts of this country, especially the smaller cities, raw milk still constitutes an appreciable percentage of the daily milk distribution. Raw milk unless certified is frequently produced under conditions not conducive to safety. The danger of contamination of raw milk has been recognized even to the extent that producers of certified milk and the American Association of Medical Milk Commissions, which supervises certified milk production, agree that pasteurization would be an additional safeguard even for certified milk.

The sale of raw milk continues in spite of the fact that pasteurized milk is safer. Certainly there is no established evidence to indicate that raw milk is any more desirable nutritionally than pasteurized milk. The Council on Foods and Nutrition of the American Medical Association has published the following decision:

"Milk is an excellent medium for many dangerous bacteria as well as an excellent food for man. Disease germs may enter the milk directly from an ailing cow, be introduced by insects, or be transferred to the milk by the fingers or mouthspray of persons having to do with the collection or transportation of milk. . .

"The pasteurization of milk is a public health measure. The public should demand pasteurized milk for drinking and the use of pasteurized milk in milk products. The dairy trade should universally adopt pasteurization in the interest of public health.

"There is no cogent evidence that pasteurized milk is significantly inferior nutritionally to raw milk."

Even today bootleg milk stations, also called 'jug stations,' still operate outside the corporate limits and consequently outside the jurisdiction of some cities in which only pasteurized milk, other than certified, is legal. When every possible legal precaution has been taken to protect a community against potential dangers in raw milk, and milk consumers persist in circumventing the local regulations by buying milk from unsupervised sources, the occurrence of milk-borne outbreaks of communicable disease cannot be attributed to any failure on the part of the health authorities.

Squibb Supplies Solution Sodium Ascorbate

For patients who are severely ill or with abnormal requirements of vitamin C such as are connected with surgical procedures, and for patients with poor utilization or faulty absorption of this vitamin, E. R. Squibb & Sons, New York, now supply Solution Sodium Ascorbate for intravenous administration. Made from the sodium salt of sure synthetic ascorbic acid (vitamin C), Solution Sodium Ascorbate contains per 1 cc. an amount equivalent to 100 mg. of ascorbic acid (2,000 U. S. P. XI units of vitamin C). It is supplied in 1-cc. ampuls, packed in boxes of six and 25.

The average dose of Solution Sodium Ascorbate is 1 cc., equivalent to 100 mg. ascorbic acid. (One clinician reports giving as high as 10,000 mg., 10 grams, intravenously in a single dose to an adult.) The Squibb leaflet on this product gives suggested dosages in infantile scurvy, severe adult scurvy, capillary fragility and surgical patients.

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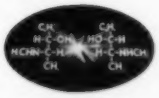

When efforts at desensitization have failed or been only partially successful in relieving hay fever or asthma, well-planned symptomatic treatment may bring welcome relief.

Solution Racēphedrine Hydrochloride (racemic ephedrine) is a reliable decongestant when applied to the nasal mucous membranes. Capsules Racēphedrine Hydrochloride may be given to prevent attacks and ameliorate their severity.

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REVIEWS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments From LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

"ARRHENOBLASTOMA OF THE OVARY." A. E. Kanter, M.D., F.A.C.S., and A. H. Klawans, M.D. The American Journal of Cancer, December 1940, vol. XL, No. 4, p. 474.

These authors are reporting a typical case of arrhenoblastoma of the ovary with teratoma in a white woman, 32 years of age.

"The arrhenoblastoma is an ovarian tumor, usually unilateral and in most instances benign, which may produce a definite symptom-complex and has typical microscopic characteristics. The clinical picture is that of defeminization and masculinization, a condition that reverts toward the normal following removal of the tumor.

The chief symptoms, as described by Schiller, are hirsutism, with the development of a chin and upper lip beard, masculine pubic escutcheon, and the growth of coarse hair on the chest and extremities; hypertrophy of the clitoris; hypertrophic laryngitis with the acquisition of a deeper and more resonant voice; amenorrhea. Associated with these are atrophy of the breasts, redistribution of fat, broadening of the shoulders, an increased firmness of the skeletal musculature, changes in facial contour with apparent heightening of the cheek bones, acne of the face and chest, and loss of libido."

The histopathology, blood and urinary chemical values, and male sex hormone determinations are discussed.

"When virilism exists in the female, several conditions must be considered in the differential diagnosis. The adrenal gland and the pituitary are both capable of producing conditions which resemble the clinical picture which may result from arrhenoblastoma. Classically we must consider tumors of the androgenic portions of the adrenal gland and the basophilic adenoma of the pituitary gland. Grollman states that tumors of the adrenal cortex proper do no produce virilism, or what he calls the adrenogenital syndrome, this function being a product of tumors in the androgenic zone."

In the study of their patient there was a decrease in serum sodium and an increase in serum potassium with relatively normal urea, non-protein nitrogen, and creatinine. In the chemical urinalysis both sodium and potassium were decreased. They feel that these are important findings because of the difficulties in differentiating very small arrhenoblastoma from adrenogenital syndrome.

"Hormonal studies, at the present time, are of no apparent help. The only factors that might give us a clue as to the precise diagnosis would be a careful blood and urinary chemical study. In the presence of adrenal tumors there is hypertension associated with a decrease in the serum sodium and an increase in the serum potassium. The urinary sodium is increased to three times normal and the potassium is decreased. The differences between these values and the ones found in the case reported here are striking. Also present in the adrenogenital syndrome and not in arrhenoblastoma are increases in the nitrogenous product retention to five or six times the normal value."

COMMENT: While arrhenoblastoma of the ovary is a relatively rare disease, a study of it such as this article is of practical importance because it brings immediately to mind these three conditions of arrhenoblastoma, adrenogenital syndrome, and basophilic adenoma of the pituitary gland when any patient is seen with defeminization and masculinization. Of probable greater practical importance is the fact that a study such as this one aids in a better conception of the minor variations from normal feminization.—Wendell Long.

"OVARIAN HEMORRHAGE." An Analysis of 28 Cases from the Records of the Jefferson Medical College Hospital, 1930 to 1939 Inclusive. Mario A. Castallo, M.D., F.A.C.S. and Louis G. Feo, M.D.: The American Journal of Surgery, July 1941, Page 82.

These authors have analyzed twenty-eight cases of ovarian hemorrhage who have had operations during a ten-year period in their hospital in Philadelphia.

Of their 28 patients, eight had sudden onset, 13 complained of sharp abdominal pain, usually more intense and localized to the right lower quadrant, a few having prior subumbilical pain. "Tenderness of the lower right quadrant was found in 21, noted usually as below McBurney's point, and three in the lower left quadrant." "Nausea occurred in 11 patients, vomiting in four and, significantly, syncope in only three, while slight vaginal bleeding or 'spotting' occurred twice."

In their series a preoperative diagnosis of appendicitis was made 15 times while ovarian hemorrhage was diagnosed correctly in only five instances.

The authors enumerate certain precautions by which they feel that more accurate diagnosis might be made and operation thereby avoided: (1) Recognition of ovarian hemorrhage as a possibility and inclusion in the differential diagnosis of abdominal conditions in women. (2) Evaluation of the symptomatology in the light of its relationship either to the time of ovulation or to the premenstruum. (3) Notation of the normal or slight elevation of temperature and leucocytosis out of proportion to the severity of the pain. Also the recession and gradual disappearance of the symptoms as contrasted to the increasing severity of symptoms and signs in appendicitis. (4) The signs of internal bleeding with an absence of the signs of pregnancy. (5) Notation that the cases lack a history of injury.

In their series 14 patients had free blood in the peritoneal cavity while all of the others had intra-ovarian hemorrhages.

They feel that the proper treatment in cases of ovarian hemorrhage is more or less in agreement because they feel that when in doubt operation should be done.

They likewise feel that conservatism is advocated in the cases brought to operation.

COMMENT: This is an extremely important subject because of the frequency of ovulatory accident associated with varying degrees of hemorrhage in the ovary and from the ovary. The authors are undoubtedly correct in assuming that the proper appreciation of this disease and its symptomatology would do much to prevent unnecessary surgical intervention.

However, it is important to note that in this series 15 of the patients had a preoperative diagnosis of appendicitis and, in patients where there is an honest doubt after careful history and consideration of such diseases as ovulatory accident, urinary tract disease and so forth, one has no choice but the most meticulous observation if the symptoms are mild or operation if the symptoms are reasonably severe.

It should be emphasized that the greatest conservatism should be employed in the average instance of ovarian hemorrhage and the ovary rarely removed because such a situation is only a slightly abnormal physiological process and the presence of ovarian hemorrhage does not condemn that ovary from future perfectly satisfactory physiological activity.

It should also be added that there are a very few rare instances of profuse bleeding from large corpus luteal cysts which require immediate attention and surgical removal.—Wendell Long.

"AN APPARATUS FOR THE PREVENTION OF POSTOPERATIVE CIRCULATORY STAGNATION." H. D. Cogswell, M.D., and C. A. Thomas, M.D., Tucson, Arizona. Surgery, August 1941, vol.10, No. 2, p. 323.

It is generally agreed that one of the greatest predisposing causes of postoperative embolism and phlebitis is retardation of the blood flow. Stagnation of the circulation is due chiefly to two factors: lessening of the excursions of the diaphragm, thus diminishing the negative intrathoracic pressure; and lack of muscular contractions and tone which pump the venous blood to the right heart. It has been shown many times that the incidence of these postoperative complications can be greatly lessened by means of muscular exercise which accelerate the circulation. Some have advocated flexing and moving the extremities. One attached a roller at the foot of the bed on which the patient made walking movements. Another uses a device consisting of two bicycle pedals mounted on a broad base for exercising the lower limbs by pedaling.

The authors have devised a simple inexpensive device which uses the same principle. It consists of a frame which loops over the end of a bed and pedals which are mounted on a support extended from the frame. The instrument is portable. There is no possibility of the apparatus slipping and suddenly throwing an unexpected strain on the abdominal muscles of the patient. The heel plates attached to the pedals give support to the legs so that there is no tension on the abdominal muscles, thus protecting fresh abdominal wounds and maintaining muscular strength. Increased resistance to muscular effort is made possible by tightening the bolts at the top of the uprights. More resistance should be added as the patient progresses.

The authors report that all of their postoperative patients, except infants, have used this apparatus routinely, and there have been no complaints of pain, fatigue, or discomfort from its use.

They believe that the stagnation of blood is overcome and that the patient is also aided psychologically by giving him something to do to aid in his recovery.

The exercises are given three times daily for five to ten minutes, beginning the first postoperative day.

Adequate illustrations of the model are given and the statement made that the apparatus may be copied for very slight cost.

COMMENT: Certainly the appearance of postoperative thrombophlebitis or embolism is one of the most distressing incidents in the experience of the surgeon. It seems to me that the routine use of some such simple device as described by the authors would be of distinct benefit and would be preferable to reliance upon voluntary exercises by the patient without any apparatus.. —LeRoy D. Long.

"THE PROBLEM OF THE TREATMENT OF PERITONITIS." Charles E. Rea, M.D., Minneapolis, Minnesota. Surgery, Gynecology and Obstetrics, August 1941, vol. 73, No. 2, p. 193.

The author reviewed the literature particularly in regard to the many agents which have been used in treating peritonitis. There is no cure all for peritonitis. Only about half the animals in his experiment could be protected regardless of the agent used. Of the substances used in his study, amfetin and coli-bactragen were no more effective than sodium ricinoleate, one percent, as far as the survival rates were concerned. The results obtained with the sulfonamides were impressive but it is questioned by the author if the results obtained were significantly better than those obtained with sodium ricinoleate, coli-bactragen, etc.

Clinically it is difficult to judge the value of certain substances in preventing peritonitis, as factors such as the amount and type of contamination at operation, organisms present, type of operative procedure performed, the experience of the surgeon, the condition of the patient, etc., must be considered.

In experimental peritonitis, unless qualitative and quantitative factors, such as the number and type of organisms present, are controlled, the results are meaningless.

Sulfonamide would seem to be most effective in the preperitonitis stage. Once peritonitis has developed, its efficacy is much reduced. Moreover, direct application of sulfanilamide would seem to be more effective than the subcutaneous administration of the drug or the placing of an equivalent amount of the powder under the skin.

In their clinic, sulfanilamide in doses of three grams has been placed in the peritoneal cavity at operation when there was suspected or actual contamination. If frank purulent peritonitis is present, sulfanilamide is not only of little value because it will be inactivated by the protein of the exudate, but it is contraindicated as it may aggravate a hepatitis already caused by the peritoneal infection. Clinically sulfathiazole may prove to be more effective than sulfanilamide in the treatment of peritonitis as the former is less toxic to the liver.

In clean cases there is no indication for the use of any of these agents. In clean incision of the skin in dogs, sulfanilamide affords no higher incidence of healing by primary intention.

In dirty or grossly infected wounds, sulfanilamide is valueless, unless a thorough debridement or cleansing of the wound is performed first.

In the few experiments performed, and in the dosage used, radiation therapy gave little or no protection against peritonitis in rabbits.

The use of hyperimmune serum would seem of value in preventing peritonitis in rabbits. A feasible plan for its use in human cases has not been worked out as yet.

In these experiments, the effect of certain substances in preventing peritonitis in rabbits was studied, controlling the number and type of organisms injected to cause peritonitis. Unfortunately, the same culture could not be used in all the experiments. Of the substances tested, however, none was effective in more than 50 percent of the cases. Sodium ricinoleate, coli-bactragen and the sulfonamides were most effective of the substances tested. The author feels that it may be questioned if sulfonamide is superior to the other substances tested in preventing peritonitis.

In regard to the use of sulfanilamide in the peritoneal cavity he draws the following conclusions: (a) it is not indicated in clean cases; (b) it is most effective in the preperitonitis stage; (c) it is more effective if placed in the peritoneal cavity than if placed under the skin; (d) it is of relatively little value in cases of frank purulent peritonitis.—LeRoy D. Long.

"OBSERVATIONS ON THE PREVENTION AND TREATMENT OF POSTOPERATIVE ATELECTASIS AND BRONCHOPNEUMONIA." Cameron Haight, M.D., and Henry K. Ransom, M.D., Ann Arbor, Michigan. Annals of Surgery, August 1941, vol. 114, No. 2, p. 243.

The presence of bronchial secretions, and the decreased pulmonary ventilation and cough efficiency subsequent to operation are vitally important factors in the genesis of postoperative atelectasis and bronchopneumonia. The prompt recognition of retained bronchial secretions is essential in the prevention of these complications, and the methods for eliciting the physical signs of retained secretions are described. The measures for aiding the cough mechanism are discussed and they are frequently

effective in providing adequate drainage of the tracheobronchial tree. As retention of bronchial secretions occurs in some instances in spite of these measures, retained secretions should be immediately removed by bronchoscopy or tracheobronchial suction *before* the advanced signs of progressing bronchial obstruction and pulmonary infection have developed. A technic for tracheobronchial suction is described; the simplicity of the technic and its applicability when repeated aspirations are required, merit its more frequent use.—LeRoy D. Long.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M. D.
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"THE SCOPE OF ELECTROSURGERY IN OTORHINOLARYNGOLOGY." The Eye, Ear, Nose and Throat Monthly, August, 1941. A. R. Hollender, M.D., F.A.C.S. Miami Beach, Florida.

Dr. Hollender gives comprehensive remarks, recapitulating the activities of this particular field. He is the Dean of electrosurgery in otorhinolaryngology in America. His conclusions and summary are as follows:

In the main, the principles of electrosurgery do not differ from those of general surgery. The method should be attempted only by one who has had general experience. Contingencies which may arise in the course of an operation require a thorough familiarity with surgical technic. In addition the operator must have a knowledge of surgical diathermy and its practical application. While electrosurgery has a wide field of usefulness, it also has definite limitations. The well-trained surgeon recognizes these facts and is guided by those principles which have been established on the basis of mature experience.

1. While electrosurgery has served a definite purpose in practically all the specialties, it is doubtful whether any of them has benefited from it as much as has otorhinolaryngology.

2. There are four electrosurgical technics: fulguration, desiccation, coagulation and electrosection, and the use of each depends on the extent and situation of the lesion.

3. The form of analgesia likewise depends on the site and character of the lesion.

4. Electrosurgery has largely replaced cauterization for various intranasal conditions.

5. Tags, stumps, remnants and recurrent lymphoid masses in the tonsillar fossa represent indications for electrosurgical removal.

6. Some lesions of the larynx and ear are satisfactorily managed by electrosurgery.

7. In the treatment of malignant neoplasms of the ear, nose and throat, a combination of procedures may be required, followed by adequate radiation.

8. Radical extirpation of malignant growths should be performed without regard for cosmetic effects; reconstruction of anatomic parts is then left to the plastic surgeon.

"THE ALLERGIC NOSE." The Original Article from Northwest Medicine, June, 1941; pp. 213-215. The Following Digest Taken from the Digest of Ophthalmology and Otolaryngology, August, 1941. Norman W. Clein, M.D. Seattle, Washington.

Nasal allergy, in the absence of hay fever or asthma, is usually not recognized as such because of its similarity to the common cold and sinus infection. In children it may also be confused with enlarged tonsils and adenoids on account of obstruction to breathing. This is probably the most common type of allergy. The nasal symptoms are frequently associated with other forms of allergic diseases such as hay fever, asthma, urticaria, eczema, migraine, and gastrointestinal disturbances.

The pathogenesis of allergy becomes apparent to the pediatrician who is in a position to study his patient from birth. Its growth and development are seen in the infant with eczema, presistent colic and vomiting. Eighty to ninety percent of allergic individuals will show these first symptoms before one year of age. This progresses into other forms of allergy such as frequent colds and coughs, the beginning of the allergic nose. Hay fever, asthma, and hives may also occur. Eczema frequently disappears spontaneously at about 18 months of age, only to reappear as another form of allergy, usually nasal and often associated with asthma.

The pathology of allergy is edema and eosinophilic infiltration of the tissue which is involved, whether in the nose, bronchial tubes or gastrointestinal tract. The eosinophiles will migrate through the epithelium and are found in the secretions. Nasal and sinus secretions, therefore, may be valuable as diagnostic agents. The cytology of these secretions may be an index of pathologic process in the tissues. Polyps are always an indication of underlying allergy.

Symptoms of the allergic nose resemble hay fever and have the same basic mechanism. They are usually milder, do not affect the eyes, and occur in any season. In most cases they are as classic as those for other diseases. The adult patient complains of nose trouble, usually of years duration. His nose is "stuffy" usually every night while in bed, and on arising in the morning. This is the one cardinal symptom. He will usually state that in an hour or two after arising his nose becomes clear so that he can breathe freely through both nostrils. During the day the nasal passages are usually open.

His trouble begins when he gets into bed. Within a short time one nostril becomes congested, usually on the side on which he happens to be lying. This obstruction may last for a few minutes or all night. On changing from side to side the nasal stuffiness may also change from one nostril to the other. Usually only one side is closed at a time, although both may be obstructed. Frequently the patient awakens with a dry mouth as a results of mouth breathing. A bad taste as well as a foul odor may be present. On arising he rasps, hacks, and clears his throat, spitting out varying amounts of thick bray mucus. The nose is blown frequently without much result. The patient often has a dull headache or "heavy feeling." Fatigue is often more noticeable in the morning than at the end of a day's work.

Headaches are frequently associated. Migraine, bilious spells and sinus headaches, often occurring behind one eye, on one side of the head or in the occiput are usually part of an allergic condition. In these cases the otolaryngologist will usually discover mild nasal symptoms which will direct his attention to the associated and underlying allergic condition. Deafness, often becoming permanent, may be due to nasal allergy involving the eustachian tubes. Chronic fatigue and general malaise occur with the above symptoms. Other forms of allergy may be present as well.

Seasonal nasal allergy or plain old fashioned hay fever is well recognized. In young children these symptoms are characterized by frequent colds and chronic coughs. They no sooner get over one cold than they come down with another. The nose is always running. Coughing is prevalent, especially at night and early morning. Fever is usually absent. These so-called colds take a long time to clear up.

In a great majority of cases the history will state that the patient has had many varied and bizarre methods of treatment. But they return to the physician with the same complaints and symptoms.

The history is of vital importance as the physical examination may be entirely negative at time of examination. In the physical examination only about 50 percent with allergic nose disease will show characteristic nasal edema and pallor; therefore, the diagnosis cannot always be made on local findings. Have the patient blow each nostril separately to note any obstruction. This is the most simple test.

Diagnosis of nasal allergy is similar in every respect

to that of other allergic conditions. Chronicity of the symptoms, plus the fact that all previous treatment has been of no avail, should immediately suggest an allergic basis for the symptoms. Too much emphasis cannot be placed upon the importance of repeated examinations of the patient and his nasal secretions before disproving the presence of allergy. Nasal smears will almost invariably show a predominance of eosinophiles in allergic nose conditions. It may be necessary to test several smears to confirm the diagnosis.

Roentgen findings of the nose and sinuses in allergic individuals have been quite misleading and misinterpreted, until recent years. Positive sinus findings are the rule rather than the exception, due to edema of the sinus mucosa similar to the nasal edema. Infection of the sinus is not as common a complication of respiratory allergy as generally believed.

Foods as a cause of nasal stuffiness are much less important than inhalant factors. They are more of a factor in infants and young children. After the age of three to four years inhalant factors become predominant. Nasal symptoms due to foods are always more prominent during the daytime.

The patient who is bothered more during the night and early morning is sensitive to allergens which he inhales. The air in his bedroom contains dust which has many minute particles from feathers in pillows, kapok, hair or cotton in the mattress, wool from rugs and blankets, clothes, drapes, pictures, trophies, especially animals, powders, shampoos, perfumes, sprays, smoke, pets, shaving lotions, pollens, molds, any or all of which may be factors irritating the nasal mucosa.

Treatment of allergic disease is often a matter of months and years. It is necessary to plan a program covering the actions and habits of the individual over a period of years. The patient must understand that the allergic study is a diagnostic test, not a treatment. Treatment is governed by results of the testing. Seventy-five to ninety percent of these patients can be given satisfactory relief with proper allergic management.

Specific treatment may consist of one or all of the following: Avoidance of specific allergens, environmental control factors, dust free room, dietary elimination. Specific desensitization with antigens made from pollens, molds, epidermals or dust. This is of greatest importance in the type of case under discussion as the inhalant factors are in the dust in the air of the bedroom. Medication is of very little value other than nose drops such as neosynephrin which gives symptomatic relief.

Although there are definite indications for tonsillectomy in many patients with respiratory allergy, this should not be performed primarily for relief of allergic symptoms. Indications should be the same as without nasal allergy. If tonsillectomy has to be done, this will not materially influence the allergic symptoms. Occasionally surgical procedures afford some relief. In any eventuality, however, operations on the nose should be performed only after treatment of the allergy. Even then such a measure should be resorted to only in carefully selected instances and always after a consultation with a competent allergist.

"VITAMIN C (ASCORBIC ACID)—ITS THERAPEUTIC VALUE IN INFLAMMATORY CONDITIONS OF THE CORNEA." T. Keith Lyle and D. W. McLean. The British Journal of Ophthalmology. vol. 25. No. 6. page 286-295. June 1941.

Although during the past few years a certain amount of research work has been carried out upon the somewhat doubtful relationship of vitamin C to development of cataract, little attention has been given to the therapeutic value of this vitamin in inflammation and ulceration of the cornea.

Experimental work on the effects of the liquid mustard gas on the eyes of rabbits by Livingston and Walker showed that ascorbic acid given intravenously was of value in the treatment of the corneal lesions. Recently, the authors began to use ascorbic acid at R.A.F. hospitals in the treatment of inflammatory conditions of the cornea.

Ascorbic acid is known to exist in high concentration in the lens and cornea of the human subject. It is a substance belonging to the group known as redox potentials, which maintains a fine balance between the processes of reduction and oxidation, by acting either as a reducing or as an oxidizing agent, whichever action is called for. It is therefore suggested that by introducing excess of ascorbic acid into the system the metabolism of the cornea might be accelerated, and in consequence the healing of inflammatory conditions of that structure hastened.

The authors used ascorbic acid in the treatment of all cases in which severe inflammatory conditions of the cornea have necessitated hospitalization of the patients. In all instances the usual local treatment was given in addition to the injections of ascorbic acid. There was, for instance, the case of dendritic ulcer of the cornea which had been previously treated by the routine methods without success. Ten and a half weeks after the onset of the ulcer ascorbic acid treatment was commenced and was given intravenously about every other day in 500 mgm doses. The progress made on the new treatment was remarkable. The eye began to improve on the day following the first injection, and therafter made steady progress. In ten days the ulcer was completely healed, leaving only a faint superficial scar.

Similar amazing results were seen in cases of disciform keratitis, scleritis with early sclerosing keratitis, vaccinial, phlyctenular, and superficial punctate keratitis, and phlyctenular ring ulcer.

In most cases treated, there was no reason to believe that a general vitamin C deficiency existed. It appears, therefore, that the beneficial results are obtained by flooding the bloodstream with excess of ascorbic acid. The vitamin treatment was tried out also in a case of iritis, but it was of no value. In fact, in such cases the vitamin therapy may be of detrimental effect.

For the treatment of corneal inflammations and ulcers the authors recommend the daily injection of 500 mgm of ascorbic acid intravenously until active inflammation of the eye has ceased, preferably followed by ascorbic acid tablets given by mouth (two tablets a day each containing 250 mgm).

"HEADACHES OF OTORHINOLOGIC ORIGIN AND CERTAIN REFLEXES CAUSED BY FIFTH NERVE IRRITATION." John G. McLaurin, M.D., Dallas. Annals of Otology, Rhinology and Laryngology. vol. 50. No. 2. page 469-491. June 1941.

It is easier to understand why the nose and the sinuses give so much trouble if it is remembered that there are some peculiar anatomic conditions in this region. The nose is in the most prominent position of the face and is therefore most easily exposed to injury, resulting in deformities of the septum and other abnormalities. In the human being there are two of the paranasal sinuses that do not drain by gravity, namely, the maxillary and the sphenoid. Animals that spend much of their time with their noses pointed downward to the ground rarely have a chronic sinus disease.

The nose and sinuses, from birth until death, are almost constantly subjected to recurrent inflammatory attacks, and these often leave an indelible imprint on the tissues. The center of sensory nerve distribution is the sphenopalatine of Meckel's ganglion. This small nerve tissue is located in the pterygopalatine fossa. It is formed of three roots: the sensory, the sphenopalatinal nerve from the superior maxillary division of the trifacial, the great superficial petrosal nerve (motor), and the sympathetic, the great deep petrosal nerve from the internal carotid plexus.

The ganglion is the second largest nerve center outside the cranial cavity, and it innervates and is intimately connected with every region treated by the otolaryngologist. For this reason, it can produce symptoms reflexly to all parts of the head, neck, and shoulders.

It is sometimes quite difficult to distingush between

the pain of sinusitis and that due to other causes. It is also true that the pain, or we may term it headache, resulting from disturbed conditions in the sinuses is so variable in its manifestations that it constitutes a most inconsistent and uncertain type of evidence in the domain of symptomatology. During recent years there has been a growing tendency to assume that most of the obscure pain in the head is due to sinus disease, and to overlook the fact that sinusitis can exist without pain. It is true, however, that sinus disease and intranasal pressure are the causes of more headaches than anything else, and we must always consider them as etiologic factors when attempting to diagnose obscure headaches.

The conditions in and about the nose that give rise to headaches or neuralgias may be classified as follows:

(1) those in which the pain is due to acute inflammation in the nose or paranasal sinuses;

(2) those in which chronic inflammation in these parts is the etiologic factor;

(3) anatomic variations in structure, which result in pressure contact within the nasal cavities; and

(4) new growths in the nose and accessory sinuses.

The headache depends largely upon the disease present within the sinus and whether such disease is capable of producing some form of pressure. The pressure may result from such a marked swelling of the lining mucosa of a sinus that the membranes of the opposite walls may be in actual contact and the sinus cavity almost occluded.

Pressure can also result when the normal openings of sinuses become partially or completely closed, thereby causing stagnation of inflammatory products within the cavities. Another form of pressure headache is negative pressure, or so-called vacuum headache. The vacuum frontal sinus headache described by Sluder causes intense pain in the frontal sinus, and this headache is aggravated by movement of the eyeballs.

In acute sinusitis there are two types of pain: (1) a constant type that is more or less localized in the region of the sinus, and (2) the neuralgic type, which is periodic. In chronic sinusitis the pain is not so well localized and is rather indefinite. There is usually a feeling of dizziness, heaviness and dullness and an inability to concentrate.

In acute maxillary sinusitis there may be a dull headache or the pain may be neuralgic. In chronic antral infection there may be no pain, even though there may be severe involvement of the sinus. Headache is the most prominent and constant symptom of acute frontal sinusitis, and it is more marked in the early morning. Chronic frontal sinusitis may or may not cause headache. In acute ethmoiditis, which is a part of almost every cold, there may be some headache during the stage when the membranes are definitely swollen in the region of the midturbinal bodies and the ostia of the ethmoid cells. The pain is felt around the root of the nose, above the inner angle of the eye, about the temples, front teeth, the parietal regions and sometimes the suboccipital areas. In the chronic types of ethmoiditis, headaches are rather inconstant.

In acute sphenoid sinusitis the headache is an intense sensation of pressure deep in the head, most marked in the posterior half of the head, behind the eyeball, in the vertex and in the mastoid region and middle ear. The pain may extend downwards into the shoulder of the affected side and produce the so-called sphenopalatine syndrome of Sluder.

Intranasal pressure is often the cause of headache. High deviation or thickening of the nasal septum capable of producing tight contact and pressure against the mid-turbinals is frequently the cause of headache of varying intensity. Nearly all headaches from intranasal pressure depend upon irritation of the sensory nerve endings in the membrane by some pressure and the effect that such irritation produces on the sphenopalatine ganglion or the anterior ethmoidal nerves.

Another special type of headache is the one called superior cervical sympathetic ganglion syndrome. There is otalgia and unilateral headache together with tender area in the side of the neck over the location of the superior sympathetic ganglions associated with a nasopharyngitis. The whole syndrome clears up when the nasopharyngitis gets well.

If any branch of the trifacial nerve is irritated by trauma, pressure or an inflammatory process there may be referred pain to any part of the head, eyes, face, teeth, lower jaw, neck, throat, suboccipital region, shoulder girdle, and down the arm to the fingers.

Migraine is frequently mistaken for pain of sinusitis or intranasal pressure, but migraine is probably an allergic phenomenon in which there are no nasal or sinus lesions demonstrable to explain the headache.

"A REVIEW OF MODERN AND RECENT DEVELOPMENTS IN THE SCIENCE OF OPHTHALMOLOGY." Edward C. Ellett, Memphis, Tennessee. The Journal of Aviation Medicine, vol. 12, No. 2, p. 144-152, June 1941.

The author describes recent advances in ophthalmology as related to aviation.

Visual efficiency depends on three factors namely visual acuity, motility, and the field of vision. The first is the test for visual acuity. It is the simplest test, and it should be made properly before any disturbing and dazzling lights are cast in the eye. The tendency among ophtholmologists is to use the metric system and make the tests at six meters. This is equivalent to 20 feet. The test letters are constructed on the Snellen charts on a scale whereby each arm of a letter subtends an angle of one minute and the whole letter an angle of five minutes. A very valuable test for near vision is to have x's and o's arranged in series.

Another test is devised to see how candidates of aviation can read maps. Their depth perception is quickly and easily tested by the Howard apparatus, which is so simple that it can be home-made if necessary. In this test the candidate judges the relative distance of two objects seen without any surrounding objects or background which might influence his judgment.

The question of muscle balance is often very closely related to the question of depth perception. Diplopia, especially latent diplopia, is a matter of great importance. It is readily detected by the simple device of putting a red glass in front of one eye. The dissimilarity of the images and the difference in stimulus afforded by the white and red lights usually make diplopia at once apparent. It is necessary to test not only with the eyes in a primary position, but turned in each of the so-called six cardinal positions. A weak muscle permits diplopia in the field of its action, while in other directions normal single vision is obtained. The presence of squint will disqualify a flyer.

The simplest and quickest test for squint is by observing the reflection of a point of light on the cornea. Not only does this detect a deviation, but it is a quick and fairly accurate way of measuring the amount of deviation, known as the Hirschbrog test. If one looks at a small point of light held directly in front of the examinee, the bright point of reflected light is seen exactly at the center of each cornea. Any deviation of either eye displaces the reflection in that eye. If it is displaced as far as the edge of the pupil, either in or out, a deviation of 15 degrees exists.

Obvious deviations of the visual axis are classed as tropias. Latent errors, the phorias, are much more common. The tests are directed to be made with a Maddox rod before one eye, either in the horizontal or the vertical position. Not so much emphasis is placed on this test as on the duction tests, which is the ability of the muscles to overcome a prism. Failure to do so causes a diplopia, and the strongest prism a muscle can overcome is the measure of its strength.

Color vision is a matter of great importance and not at all simple. Color blindness is usually congenital and not attended with any defect of vision or pathology of the eye. Acquired forms as in tobacco, alcohol poisoning, etc., are associated with defects in the vision.

The quickest tests of color vision are made with the Stillings or Ishihara plates or the A.O.Co. plates. Failure to qualify with these tests requires further testing by the Holmgren wool or the Jennings test. Accidents could be traced to defective color vision both in aviators and in sailors.

Defects in the visual field are of great practical importance. Gross defects can be discovered by the so-called confrontation test, if the defect is in the peripheral field. Defects in the central field will cause loss of visual acuity.

PLASTIC SURGERY

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"METHOD OF DETERMINING THE CORRECT SEAT OF THE NIPPLES IN PLASTIC SURGERY OF THE BREASTS. A NEW INSTRUMENT TO FACILITATE IT." Hugo J. Ehrenfeld, New York, N. Y. Neure Anschauungen in der Frage der Korrektiven Haengebrustplastik und ein neues Verfahren. Zbl. F. Chir., 62:628-639, 1935.

The author stresses the importance of locating the nipples in breast plastic operations. He has devised an instrument called "the mastometer."

Summary: 1. In case of plastic surgery of the breast, the choosing of the future seat of the nipples is the surgeon's most important task, since the correctly placed nipples are indispensable in achieving good cosmetic results.

2. The future seat of the nipples can be correctly determined only individually, and by determining the foundation of the breast with regard to the symmetry of both sides.

3. An instrument called the mastometer enables the determination of the foundation of the breast and the future sent of the nipples almost automatically.

Comment: Anyone doing breast plastics will appreciate the use of this instrument. If one nipple is off-balance or off-center the final result is often not satisfactory, especially to the patient.

The author has clarified the article by diagrams and photography.—George H. Kimball, M.D.

CARDIOLOGY

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"FALLACIES IN THE TREATMENT OF HEART DISEASE." White, Paul D. New Orleans Medical and Surgical Journal, 93:565, May, 1941.

As in nearly everything else in human endeavor the best path in cardiac treatment is the conservative one.

"There are two important bits of advice . . . that apply not only to any kind of heart trouble but to many medical and indeed even surgical diseases. They are as follows: First, when things are not going well in the face of much drug or other therapy, try a rest day or two or three without any medicines at all (except in the case of essential rations like insulin), every now and then the result is little short of miraculous in arousing a spark of life, of appetite, or a morale which had been dampened by the very drugs which perhaps at first or on occasion may actually be lifesaving. Life-saving measures may prove too heroic for everyday life and may eventually result in severe depression or worse. The other bit of advice is a corollary. Do not use too many vigorous agents at one time. Each drug or measure may be very valuable and several together may prove vitally helpful, but every now and then in combination too rapidly administered they may do harm. . . . It is well to follow the middle of the road, even in emergency treatment."

The writer discusses various "cardio-vascular symptoms and signs with reference particularly to therapeutic measures that are commonly carried out but which would be well avoided."

"Palpitation."—There are all kinds of causes for palpitation, most of which are not cardiac in origin; that is, heart disease itself is not the cause of palpitation in the large majority of cases. Therefore, try first to find out the cause for the palpitation—it may be easily discovered and eliminated, for example, fatigue, nervous strain, overeating, coffee, tobacco, alcohol, thyrotoxicosis. Do not give drugs right away, even if you cannot find the cause. In the absence of serious causes, and even in their presence, reassurance so far as the symptom is concerned is in order. For palpitation alone, strong measures like morphine and digitalis are to be avoided; the former may be habit forming and the latter may only increase the uncomfortable heart action . . . unless auricular fibrillation or auricular flutter is present." What has just been said "applies to simple tachycardia and bradycardia, extra systoles and almost all cases of paroxysmal tachycardia. Reassurance, correction or eradication of an obvious remediable cause, and in some cases sedatives or quinidine, are in order, not morphine, bed rest, or digitalis. Even auricular flutter or fibrillation may be so fleeting that it needs little treatment or occasion for apprehension. For frequent recurrence, rations of quinidine sulphate three or four times a day are usually far better than digitalis.

Moreover a person should in no way be considered a cardiac invalid simply because he may have occasional paroxysms of tachycardia or even of auricular fibrillation. He may actually have fewer such attacks if he lives a normal life, avoiding nervous strain and excessive tobacco, but not avoiding moderate exercise (including golf). . . . It is sometimes difficult or impossible, by any known method of treatment (digitalis, quinidine, sedatives, absolute rest, or other measures), to control the ventricular rate in the presence of fibrillation. Reasons for this are several, and one of these should be suspected in dealing with such a case. They include: (1) Infection, often obscure as in the case of a mild or moderately active rheumatic infection; (2) pulmonary embolism or infarction; (3) infarction elsewhere as in heart or kidney; (4) thyrotoxicosis, often not very clear-cut, and perhaps, (5) a highly emotional state. Be patient and treat so far as it is possible these other factors and do not force digitalis with the possibility of poisoning."

"Do not give digitalis to a person simply because he is short of breath." A considerable number of patients referred for dyspnea are getting digitalis but are no better for it. "The clue to most of these cases at once is the finding of a normal heart size. A good rule is that dyspnea is not due to heart failure or obstruction, as from mitral stenosis, if the heart size is normal. Also remember that acute asthma and indeed even pulmonary edema, unilateral or bilateral, may occur reflexly as from a chest tap without heart disease or failure. But, of course, bronchitis may complicate heart disease, and vice versa."

"Precordial pain or heartache is in the majority of cases not due to heart disease. It needs careful appraisal as to cause but in most cases it is relatively unimportant, of nervous origin largely and to be treated in part at least by reassurance. Do not put people with heartache to bed or give them morphine unless you are very sure they need it. A nervous woman of 35 or 40 with precordial pain is very unlikely to be suffering from coronary thrombosis.

"And even substernal oppression is often not anginal pectoris but rather due to spasm of stomach or esophagus, to be treated by belladonna and diet rather than by rest and nitroglycerine. Also in such cases omit tobacco and nerve strain; large doses of reassurance are in order.

"Moreover, syncope and faintness and vertigo are sometimes wrongly ascribed to the heart and treated as such. They are most likely to be due to vasomotor in-

stability or in the case of vertigo to Meniere's syndrome."

When all these various symptoms mentioned above are gathered together in one person, one can almost at once diagnose that bothersome condition called neurocirculatory asthenia or the soldiers heart, which will rapidly come to the fore again in the present emergency." It is a difficult thing to treat and hence far better to avoid, in high degree at least, in the enlistment of the new army. As to its treatment the writer follows that outlined by Da Costa.

"Cyanosis is commonly due to pulmonary disease rather than heart disease, or when it is the result of heart disease, it comes most often from a congenital defect or from pulmonary congestion and local systemic stasis in mitral stenosis without myocaridal failure and is not benefited by digitalis unless the heart rate is high in auricular fibrillation or unless the liver is enlarged and the systemic venous pressure raised, which is not the rule. Nor does oxygen help appreciably, for the fault is a mechanical one. Such cyanosis can be endured with little harm for years. It may cause undue apprehension."

Cardiac enlargement per se requires no treatment unless one wishes to give small or moderate daily rations of digitalis in older persons with large hearts under constant strain with the idea of retarding the appearance of congestive failure.

"Murmurs per se are not to be treated with digitalis or by rest, although factors back of them like luetic aortitis may need therapy."

"Fast pulses do not require digitalis, unless they result from auricular fibrillation, or flutter, and yet the drug is often given with little avail and even with toxic results in thyrotoxicosis, infections, infarction, and excessive nervousness, including neurocirculatory asthenia.

"A slow pulse rate, even in the forties requires no treatment per se, even if heart block is present; only if the block is unstable with pulse dropping low enough to threaten the patient with syncope (a very rare occurrence) is treatment needed. Otherwise a slow pulse is a decided asset.

"The same may be said of low blood pressure. Almost invariably, even when the systolic pressure is constantly at or near 100, such hypotension is an asset." Of course, if the pressure has dropped abruptly from 200 to 100 one has another situation, "but even so, such low pressure is not to be treated if it is uncomplicated by symptoms or other signs."

"Hypertension is to be treated by sensible measures of rest, reduction of weight, and correction of obvious causative factors."

"Edema of the legs, even of both legs, is in the minority of cases due to heart failure. It is most commonly the result of local circulatory fault, with or without varicose veins, phlebitis, or marked obesity."

"Most congestion of the lungs, best seen by x-rays, is not accompanied by rales, and most rales, even at the bases, are due to other than heart failure, although the factors responsible, namely, atelectasis, pulmonary infarction (commonly at both bases), or infection, frequently complicate heart disease or failure (as in acute coronary thrombosis or serious mitral stenosis)."

"Digitalis . . . is an invaluable drug but it is overused at the present day. . . . Not only are at least twice as many patients receiving digitalis as need it, but twice as much as necessary is given to many of those who do not need it."

"In brief . . . give digitalis only to those persons with clear evidence of heart failure or in whom such failure threatens or is in doubt, and to cases of auricular fibrillation or flutter that do not clear quickly on their own or by the use of quinidine, and not to the great majority of cardiac patients. And when you give it, reduce the dosages you once gave (a few years ago or even now if you have not changed) to about two-thirds or three-quarters strength. Also look out for toxic digitalis effects from vigorous mercurial diuresis in edematous cases."

There are two more "bits of advice which may help to correct other fallacies in cardiac treatment. First, do not give too much morphine to cardiac patients even with coronary thrombosis or acute pulmonary edema. Give enough to dull the pain or dyspnea but avoid overdosage, for morphine and its allies, pantopon and dilaudid, often cause depressing or nauseating effects which can be very disagreeable and indeed definitely harmful. Second, do not rush to try every new remedy suggested in the treatment of coronary disease with insufficiency. None of them is of great value, drugs or surgery, or x-radiation. The old standbys of rest and the nitrites are still the best, although in a few instances aminophyllin and nerve injections do seem to help. Radical measures like total thyroidectomy and implantation of new blood supply have not proved their worth, nor has radiation of the adrenal glands.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D., F. A. C. S.
605 N. W. 10th, Oklahoma City

"THERAPY IN ACUTE OSTEOMYELITIS OF THE FRONTAL BONE." (Ein Beitrag zur Therapie der akuten Osteomyelitis des Stirnbeines). Arch. f. Ohren-Nasen-u. Kehlkphlh., 1940, 147:353.

Suppurative inflammation of the flat cranial bones is particularly dangerous because of the relationship to the cranial cavity. In view of the continuous progress of the illness, radical treatment is necessary. Delayed or semi-delayed treatment as well as x-ray therapy, though effective in isolated instances, is insufficient for the majority of cases. The most radical operation appears entirely justified in view of the fact that new bone formation takes place rapidly, particularly in young individuals. However, it seems desirable to save as much bone as possible, and, if there is no extension of the infection into the cranial cavity, to restrict oneself to decortication, or the removal of the outer layer. For safety's sake the hard cerebral membrane should be laid open in several places. If it shows pathological change, the inner layer should be removed also. The question of possible disfigurement should be secondary in consideration. Coronal section is recommended.

Gaus reports three cases of suppurative inflammation of the frontal bone. In two instances the patients were children, a girl eight years of age and a boy five years old. The former was brought to the clinic for treatment after a three-day illness, in a state of stupor and with a swelling over the left orbit. The eye itself showed no pathological changes.

The immediate surgical intervention, consisted of a section across the eyebrow, disclosed a focus of pus in the outer portion of the orbit; moreover, an open fistula was seen at the base of the cranial cavity, and this was cleaned out from underneath. On the following day the general condition of the patient was worse and there was evidence of a pasty swelling reaching from the middle of the forehead to the temple. It was necessary to expose the frontal bone more thoroughly by a section reaching medially to the sutura coronalis and by another transverse section reaching to the upper edge of the ear. Under the osseous membrane a few suppurative foci were found; the diploe showed numerous foci of suppuration, and the same condition prevailed on the hard cerebral membrane; it was necessary to remove the entire bone together with the margin of the orbit. No sutures were applied. The child recovered quite rapidly. The subsequent considerable shrinkage of the flap made a plastic operation necessary which was rendered difficult on account of the former having grown to the hard cerebral membrane.

In the case of the boy, a swelling on the upper right eyelid appeared eight days before hospitalization. The swelling spread to the left eye in the course of the following days, a pasty swelling appeared within the radius of the left side of the forehead, and the skin

took on a blue red coloring; there was a high temperature and the patient became unconscious. The frontal bone was exposed by a bilateral section which reached across the eyebrows and was joined by a transversal section across the radix nasi. Since during the process of exposure numerous foci were discovered in the intermediary layer, but the inner bone surface and the exposed portions of the hard cerebal membrane were unaffected, the operation was restricted to decortication and the wound surface was filled with gauze strips saturated with codliver-oil salve. After two days the boy was fully conscious. Recovery was somewhat delayed by the appearance of an ulceration on the child's back.

A considerable shrinkage of the flap made a plastic operation necessary.—Earl McBride, M.D.

"THE CONSERVATIVE COMPENSATION-DEROTATION TREATMENT OF SCOLIOSIS." Steindler, A., and Ruhlin, C. W. J. Bone & Joint Surgery, 1941, 23:67.

Since in most cases of scoliosis it is impossible to secure anatomical restoration, measures which realign the spine by compensation — balancing the head and shoulders over the pelvis — are acceptable as a compromise. If adequate musculature is available to maintain balance, satisfactory results can be obtained. In the absence of such muscle power, fusion is required.

The cases are grouped into five types:

1. Those which compensate spontaneously and maintain their correction during the period of rapid growth and after adolescence. These are about 30 percent of the total.
2. Those in which compensation can be secured conservatively and in which adequate muscle tone can be developed to maintain correction. The majority of slight and moderate habitual and rachitic scolioses belong in this group.
3. Those in which adequate compensation can be maintained, and in which adequate muscle power can be developed, but in which compensation is likely to break down because of marked adaptive or congential osseous changes. This group, including the more severe, progressing habitual types and the congenital cases, probably should be fused.
4. Those in which alignment is possible, but muscle power is inadequate. These include most paralytic cases and probably should also be fused.
5. Those which cannot be adequately realigned because of severe structural deformity. This group comprises the most severe congenital cases, severe habitual scoliosis. The curvature, if it is progressing, fusion should be done. If stable, it should be left undisturbed or treated by support.

Treatment consists of systematic development of the muscle tone and improvement of the mechanical efficiency of the muscles by symmetrical and asymmetrical exercises to develop the back, abdominal, and shoulder muscles, with the formation and maintenance of compensatory curves. During the period of muscle development a brace is applied to safeguard the maintenance of posture until the muscles are strong enough to hold by their own power.

If forced compensation is obtained by the use of a weight-cast, fusion must be done to hold the correction. The authors further state that rotary deformity of the thorax cannot be corrected by any of our present methods of treatment.—Earl McBride, M.D.

"FRACTURES OF THE SHAFT OF THE RADIUS AND ULNA." Hinton, D., and Steiner, C. A. Surg. Clin. North Am., 1940, 20:1669.

This article concerns itself with simple fractures of the forearm which are not displaced or are reducible by manipulation. For general anesthesia the authors prefer vinethene, except in fluoroscopic reductions for which gas-oxygen is used. Immobilization is maintained by anterior and posterior splints.

For fractures of the radius above the insertion of the pronator teres, the supinated position is employed, while fractures at a lower level are healed in midpronation. Splints are removable for the early institution of physical therapy.—Earl McBride, M.D.

"THE CONSERVATIVE TREATMENT OF FRACTURES OF THE HUMERUS." North, J. P. Surg. Clin. North Am. 1940, 20:1633.

The author discusses briefly the treatment of fractures of the upper end of the shaft of the humerus. In fractures of the surgical neck with little or no displacement, the use of a sling and swathe is advised. The importance of early active motion, begun gradually four or five days after the injury, is stressed. Fracture of the surgical neck with considerable displacement may result in excellent functional results even though reduction is imperfect. If reduction can be accomplished, the arm can usually be brought to the side and maintained in a sling and body swathe. A plaster abduction spica cast may be required. Occasionally balanced traction may be employed.

In the treatment of shaft fractures, the Caldwell hanging cast is recommended. The author recognized that the method is unorthodox since it does not immobilize the proximal fragment, but states that it works in actual practice despite flagrant violations of the accepted principles.—Earl D. McBride, M.D.

INTERNAL MEDICINE

Edited by Hugh Jeter, M. D., F. A. C. P., A. S. C. P.
1200 North Walker, Oklahoma City

"THE ERYTHROCYTE SEDIMENTATION TEST." M. M. Wintrobe. From the Department of Medicine, Johns Hopkins Hospital and University. American Journal of Clinical Pathology, July, 1941, vol .11, No. 7, p. 562.

This is a very comprehensive and short report on the sedimentation test. Very interesting theories in connection with the phenomenon with which the test is concerned, are suggested. Factors of chief importance affecting the rate are given. Photographs of drops of blood taken from different individuals are shown. Remarks are made in connection with the selection of a method, and clinical value of the test is discussed. In this latter connection it is considered to be a non-specific reaction which should be used to supplement other clinical findings, such as temperature, leucocyte count, etc. The author advocates its routine use similarly to the blood count and urinalysis, stating that the finding of an increased rate should challenge the diagnostic search by the physician in connection with the accurate diagnosis.

It is most unusual to find an increased sedimentation rate in the absence of disease or pregnancy. The fluctuation at menstruation is so slight that it may be disregarded.

Besides serving as a clue to the presence of occult disease, the sedimentation test has been found useful as an objective means for following the course of disease in cases in which fever or leukocytosis, or other signs, are absent or at least are not conveniently mensurable. This is true particularly in regard to rheumatic fever and tuberculosis.

A number of observers agree that the sedimentation rate is regularly accelerated in patients with rheumatic carditis, and even minor fluctuations have been regarded as being directly correlated with the clinical course of the disease. In the absence of congestive cardiac failure, a less rapid rate indicates improvement, an increasing rate presages clinical exacerbation.

In the study of cases of pulmonary tuberculosis, the test is widely employed and is unquestionably valuable, particularly in observing ambulatory patients or in following cases in which the pulmonary lesion is in a lung collapsed by pneumothorax.

It is when it has been used as an aid in differential diagnosis that the sedimentation test has received most criticism, although even for this purpose it is an admittedly valuable adjunct. It may be helpful in aiding the differentiation of infections and degenerative arthritis, but sometimes it has been found misleading. Gynecologists have used the test as an aid in the differentia-

tion of pelvic masses. An accelerated sedimentation rate, other things being equal, favors coronary thrombosis rather than angina pectoris. As in other types of chronic disease in which fever and leukocytosis subside quickly even though the lesion is by no means healed, the sedimentation rate may be used in cases of coronary thrombosis as a guide to the length of time the patient needs to be confined to bed. Unfortunately, "other things" are not always "equal," and confusion in differential diagnosis may be caused by the fact that the suspension stability of the red corpuscles knows no master. The sedimentation rate may as readily be accelerated as the result of an infection or an abscess in some undiscovered location, as following cardiac infarction or reactivation of rheumatic infection, and unless the test is used in conjunction with thorough and repeated examinations of the patient, it may be very misleading.

"CLINICAL AND LABORATORY OBSERVATIONS ON SO-CALLED 'KIDNEY THRESHOLD FOR GLUCOSE.'" K. Y. Yardumian and A. N. Alpern. From Department of Pathology, Isaac Kaufman Foundations, Montefiore Hospital, Pittsburgh, Pennsylvania. American Journal of Clinical Pathology, May, 1941, vol. 11, No. 5.

Interesting and practical conclusions as a result of painstaking case studies are reported, such as follows:

After an extensive study and observation of both diabetic and nondiabetic patients, and also from results of limited animal experimentation, we conclude:

1. There is no fixed renal "threshold" for glucose in individuals as a group in health or in disease.
2. The same individual under diverse physiological and pathological conditions will show fluctuation of renal threshold.
3. The condition of the kidneys, the number of functioning nephromes, the rate of infiltration through the glomeruli, the capacity of the reabsorption by the tubules, the maximum concentration of glucose in the blood—all of these factors have an influence on the "renal threshold" at a given time.
4. Pyogenic infection of the urinary tract may contribute to the combustion of free glucose in the urine, thus giving a false negative urine.
5. Any form of infection outside of the urinary tract, including gangrene of extremities, has altered the renal "threshold" with a tendency to high threshold. As soon as those offending conditions subside the threshold drops. Our explanation of this phenomenon is the alteration of the filtration by the glomeruli and absorption of the epithelia of the tubules due to pathological physiology.
6. The practical application of these observations in clinical medicine is that one should not depend on urinary findings alone in the diagnosis and treatment of diabetics especially when there are complications. Furthermore, interpretations of hypoglycemia and glycosuria are not as simple as some investigators have presented them to us.

(a) Excretion of sugar in the urine may be erroneously regarded as incipient diabetes, an error which may have economic, social and psychic consequences of a grave nature for the patient.

(b) It will be just as unfortunate if early diabetes is regarded as benign glycosuria. This mistake in such cases is often not discovered until the disease has progressed far and is perhaps so far advanced that the most opportune time to attack and arrest its development has already passed.

UROLOGY

Edited by D. W. Branham, M. D.
502 Medical Arts Building, Oklahoma City

"THE NEUROGENIC BLADDER IN DIABETES MELLITUS: EARLY RECOGNITION WITH A REPORT OF CASES." Abraham Rudy and S. Richard Muellner. Urological Services of the Beth Israel Hospital, Boston.

Neurologic disturbance of the urinary bladder is not uncommon in diabetes mellitus. Its presence should be looked for during an exacerbation of diabetes, and in diabetic patients with urinary symptoms who are on deficient diets, and who have lost much weight.

Bladder disturbances are frequently associated with other abnormal neurologic signs and symptoms.

The prognosis, contrary to the general belief, is fair in properly treated cases.

The treatment should consist of control of the diabetes, and of a diet as nearly normal as possible and high in vitamins and minerals. Vitamin concentrates, especially vitamins B1 and B-complex should be used extensively and for a prolonged period of time. Bladder instrumentation should be avoided in uninfected cases. Constant bladder drainage, chemotherapy and urinary antiseptics are of value, when urinary tract infection is present.

"TREATMENT OF EPIDIDYMITIS BY INFILTRATION OF SPERMATIC CORD WITH PROCAINE HYDROCHLORIDE." Donald R. Smith, University of California Medical School, San Francisco, California.

A new method of treatment for epididymitis was tried with very satisfactory results in relieving pain and hastening cure of this disability.

Fifteen patients suffering from epididymitis were subjected to spermatic cord infiltration with one percent novocain; 10 to 20 cc. of solution injected in the cord region just above the testicle.

The authors state that in all but one case immediate relief from pain was obtained, and after one or two hours in the majority at most, only a mild discomfort was complained of. No untoward reactions or complications occurred with this method.

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OFFICERS OF COUNTY SOCIETIES, 1941

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Alfalfa	H. E. Houston, Cherokee	L. T. Lancaster, Cherokee	Last Tues. Each 2nd Mo.
Atoka-Coal	J. B. Clark, Coalgate	J. S. Fulton, Atoka	
Beckham	H. K. Speed, Sayre	T. W. Pratt, Cheyenne	Second Tues, eve.
Blaine	L. R. Kirby, Okeene	W. F. Griffin, Watonga	
Bryan	J. T. Colwick, Durant	W. K. Haynie, Durant	Second Tues, eve.
Caddo	E. W. Hawkins, Carnegie	G. E. Haslam, Anadarko	
Canadian	P. F. Herod, El Reno	A. L. Johnson, El Reno	Subject to call
Carter	R. C. Sullivan, Ardmore	H. A. Higgins, Ardmore	
Cherokee	P. H. Medearis, Tahlequah	Isadore Dyer, Tahlequah	
Choctaw	C. H. Hale, Boswell	Floyd L. Waters, Hugo	
Cleveland	D. G. Willard, Norman	Phil Haddock, Norman	Thursday nights
Comanche	G. G. Downing, Lawton	Donald Angus, Lawton	
Cotton	Mollie Scism, Walters	R. M. Van Matre, Walters	Third Friday
Craig	Powell L. Hays, Vinita	Paul G. Sanger, Vinita	
Creek	P. K. Lewis, Sapulpa	Wm. P. Longmire, Jr., Sapulpa	
Custer	C. Doler, Clinton	W. C. Tisdal, Clinton	Third Tuesday
Garfield	V. R. Hamble, Enid	John R. Walker, Enid	4th Thursday
Garvin	Robert M. Alexander, Paoli	John R. Callaway, Pauls Valley	Wed. before 3rd Thur.
Grady	Turner Bynum, Chickasha	Roy E. Emanuel, Chickasha	3rd Thursday
Grant	I. V. Hardy, Medford	E. E. Lawson, Medford	
Greer	J. B. Lansden, Granite	J. B. Hollis, Mangum	
Harmon	Samuel W. Hopkins, Hollis	Wm. M. Yeargan, Hollis	1st Wednesday
Haskell	Wm. S. Carson, Keota	N. K. Williams, McCurtain	
Hughes	William L. Taylor, Holdenville	Imogene Mayfield, Holdenville	First Friday
Jackson	Raymond H. Fox, Altus	Willard D. Holt, Altus	Last Monday
Jefferson	D. B. Collins, Waurika	J. I. Hollingsworth, Waurika	
Kay	J. G. Ghormley, Blackwell	L. I. Wright, Blackwell	3rd Thursday
Kingfisher	F. C. Lattimore, Kingfisher	H. Violet Sturgeon, Hennessey	
Kiowa	J. M. Bonham, Hobart	J. L. Adams, Hobart	
Le Flore	G. R. Booth, Le Flore	Rush L. Wright, Poteau	
Lincoln	J. W. Adams, Chandler	C. W. Robertson, Chandler	First Wednesday
Logan	Wm. C. Miller, Guthrie	J. L. LeHew, Jr., Guthrie	Last Tuesday evening
Marshall	John L. Holland, Madill	J. F. York, Madill	
Mayes	S. C. Rutherford, Locust Grove	E. H. Werling, Pryor	
McClain	B. W. Slover, Blanchard	R. L. Royster, Purcell	
McCurtain	R. D. Williams, Idabel	R. H. Sherrill, Broken Bow	4th Tues. eve.
McIntosh	D. E. Little, Eufaula	W. A. Tolleson, Eufaula	2nd Tuesday
Murray	P. V. Annadown, Sulphur	O. D. Thomas, Sulphur	
Muskogee	A. N. Earnest, Muskogee	S. D. Neely, Muskogee	1st & 3rd Monday
Noble	J. W. Francis, Perry	C. H. Cook, Perry	
Okfuskee	J. M. Pemberton, Okemah	L. J. Spickard, Okemah	2nd Monday
Oklahoma	George H. Garrison, Okla. City	W. W. Rucks, Jr., Okla. City	4th Tuesday
Okmulgee	I. W. Bollinger, Henryetta	M. D. Carnell, Okmulgee	2nd Monday
Osage	T. A. Ragan, Fairfax	George Hemphill, Pawhuska	2nd Monday
Ottawa	J. W. Craig, Miami	L. P. Hetherington, Miami	Last Thursday
Pawnee	M. L. Saddoris, Cleveland	Robert L. Browning, Pawnee	
Payne	A. B. Smith, Stillwater	Haskell Smith, Stillwater	3rd Thursday
Pittsburg	W. H. Kaeiser, McAlester	Edw. D. Greenberger, McAlester	3rd Friday
Pontotoc	E. M. Gullatt, Ada	R. E. Cowling, Ada	1st Wednesday
Pottawatomie	R. M. Anderson, Shawnee	Clinton Gallaher, Shawnee	1st & 3rd Saturday
Pushmataha	E. S. Patterson, Antlers	D. W. Connally, Antlers	
Rogers	W. A. Howard, Chelsea	P. S. Anderson, Claremore	1st Monday
Seminole	Claude S. Chambers, Seminole	Mack I. Shanholtz, Wewoka	
Stephens	E. C. Lindley, Duncan	John K. Coker, Duncan	
Texas	L. G. Blackmer, Hooker	Johnny A. Blue, Guymon	Subject to call
Tillman	T. F. Spurgeon, Frederick	O. G. Bacon, Frederick	
Tulsa	J. C. Brogden, Tulsa	Roy L. Smith, Tulsa	2nd & 4th Mon. Eve.
Wagoner	H. K. Riddle, Coweta	S. R. Bates, Wagoner	
Washington-Nowata	S. A. Lang, Nowata	J. V. Athey, Bartlesville	2nd Wednesday
Washita	A. S. Neal, Cordell	James F. McMurry, Sentinel	
Woods	C. A. Royer, Alva	O. E. Templin, Alva	Last Wednesday
Woodward	Joe L. Duer, Woodward	C. W. Tedrowe, Woodward	